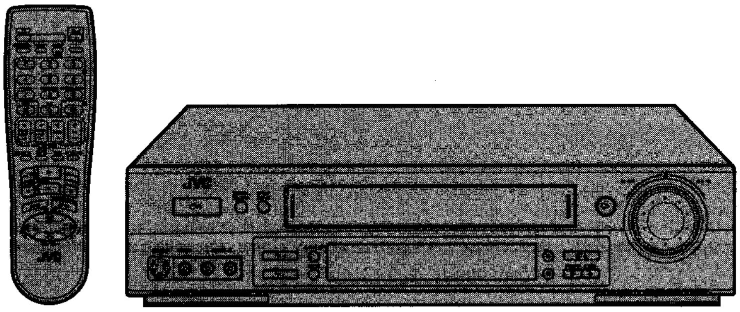
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S6700EK/EU,HR-S7700EK/EU



VIDEO Plus+®
DELUXE
Hi-Fi S-VHS 625
Super VHS ET

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S7700EK/S7722EK)*

GENERAL

Power requirement : AC 220 V – 240 V∿, 50 Hz/60 Hz
Power consumption
  Power on : 23 W
  Power off : 5.2 W
Temperature
  Operating : 5°C to 40°C
  Storage : –20°C to 60°C
Operating position : Horizontal only
Dimensions (WxHxD) : 400 mm x 94 mm x 344 mm
Weight : 4.2 kg
Format : S-VHS/VHS PAL standard
Maximum recording time
  (SP) : 240 min. with E-240 video cassette
  (LP) : 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system : PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system : DA4 (Double Azimuth) helical scan system
Signal-to-noise ratio : 45 dB
Horizontal resolution : 250 lines (VHS)
  400 lines (S-VHS)
Frequency range : 70 Hz to 10,000 Hz (Normal audio)
  20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output : 21-pin SCART connectors (IN/OUT x 1, IN/DECODER x 1)
  RCA connectors (VIDEO IN x 1, AUDIO IN x 1, AUDIO OUT x 1)
  S-Video connectors (IN x 1, OUT x 1)

TUNER/TIMER

TV channel storage capacity : 99 positions (+AUX position)
Tuning system : Frequency synthesized tuner
Channel coverage : VHF 44.5 MHz – 143 MHz/
  143 MHz – 470 MHz
  UHF 470 MHz – 862 MHz
Aerial output : UHF channels 22 – 69 (Adjustable)
Memory backup time : Approx. 60 min.

ACCESSORIES

Provided accessories : RF cable,
  Satellite Controller,
  Infrared remote control unit,
  "AA" battery x 2,
  S-VHS ET labels

Specifications shown are for SP mode unless otherwise specified.
E.& O.E. Design and specifications subject to change without notice.

This service manual is made from all recycled paper.

COPYRIGHT © 2000 VICTOR COMPANY OF JAPAN, LTD.

No. 82796
March 2000

TABLE OF CONTENTS

Section Title Page

Important Safety Precautions

INSTRUCTIONS

1. DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART 1-1
1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY 1-1
1.3 DISASSEMBLY/ASSEMBLY METHOD 1-1
1.4 SERVICE POSITION 1-4
  1.4.1 How to take out the Mechanism and Main board assemblies 1-4
  1.4.2 Precautions for cassette loading in the "SERVICE POSITION" 1-5
  1.4.3 Cassette loading and ejection methods in the "SERVICE POSITION"(See Fig. 1-4-3). 1-5
1.5 MECHANISM SERVICE MODE 1-5
  1.5.1 How to set the "MECHANISM SERVICE MODE" 1-5
1.6 EMERGENCY DISPLAY FUNCTION 1-6
  1.6.1 Displaying the emergency information 1-6
  1.6.2 Clearing the emergency history 1-6
  1.6.3 Emergency content description 1-7
  1.6.4 Emergency detail information ① 1-8
  1.6.5 Emergency detail information ② 1-9
1.7 SYSCON CIRCUIT 1-10
  1.7.1 Syscon CPU pin function (IC3001) 1/2 1-10
  1.7.2 Syscon CPU pin function (IC3001) 2/2 1-11

2. MECHANISM ADJUSTMENT

2.1 BEFORE STARTING REPAIR AND ADJUSTMENT 2-1
  2.1.1 Precautions 2-1
  2.1.2 Checking for Proper Mechanical Operations 2-1
  2.1.3 Manually Removing the Cassette Tape 2-1
  2.1.4 Jigs and Tools Required for Adjustment 2-3
  2.1.5 Maintenance and Inspection 2-3
2.2 REPLACEMENT OF MAJOR PARTS 2-6
  2.2.1 Before Starting Disassembling (Phase matching between mechanical parts) 2-6
  2.2.2 How to Set the Mechanism Assembling Mode 2-7
  2.2.3 Cassette Holder Assembly 2-7
  2.2.4 Pinch Roller Arm Assembly 2-10
  2.2.5 Guide Arm Assembly and Press Lever Assembly 2-10
  2.2.6 Audio Control Head 2-10
  2.2.7 Loading Motor 2-11
  2.2.8 Capstan Motor 2-11
  2.2.9 Pole Base Assembly (supply or take-up side) 2-12
  2.2.10 Rotary Encoder 2-12
  2.2.11 Clutch Unit 2-13
  2.2.12 Change Lever Assembly, Direct Gear and Clutch Gear1 2-13
  2.2.13 Link Lever 2-13
  2.2.14 Cassette Gear, Control Cam and Worm Gear 2-14
  2.2.15 Control Plate 2-14
  2.2.16 Loading Arm Gear (supply or take-up side) and Loading Arm Gear Shaft 2-15
  2.2.17 Take-up Lever, Take-up Head and Control Plate Guide 2-16
  2.2.18 Capstan Brake Assembly 2-16
  2.2.19 Sub Brake Assembly (take-up side) 2-17
  2.2.20 Main Brake Assembly (take-up side), Reel Disk (take-up side) and Main Brake Assembly (supply side) 2-17
  2.2.21 Tension Brake Assembly, Reel Disk (supply side) and Tension Arm Assembly 2-17
  2.2.22 Idler Lever, Idler Arm Assembly 2-18
  2.2.23 Stator Assembly 2-18
  2.2.24 Rotor Assembly 2-18
  2.2.25 Upper Drum Assembly 2-19
2.3 COMPATIBILITY ADJUSTMENT 2-20
  2.3.1 Checking/Adjustment of FM Waveform Linearity 2-20
  2.3.2 Checking/Adjustment of the Height and Tilt of the Audio Control Head 2-21
  2.3.3 Checking/Adjustment of the Audio Control Head Phase (X-Value) 2-21
  2.3.4 Checking/Adjustment of the Standard Tracking Preset 2-22
  2.3.5 Checking/Adjustment of the Tension Pole Position 2-22

3. ELECTRICAL ADJUSTMENT

3.1 PRECAUTION 3-1
  3.1.1 Required test equipments 3-1
  3.1.2 Required adjustment tools 3-1
  3.1.3 Color (colour) bar signal,Color (colour) bar pattern 3-1
  3.1.4 Switch settings and standard precautions 3-1
  3.1.5 EVR Adjustment 3-2
3.2 SERVO CIRCUIT 3-2
  3.2.1 Switching point 3-2
  3.2.2 Slow tracking preset 3-2
3.3 VIDEO CIRCUIT 3-3
  3.3.1 D/A level 3-3
  3.3.2 EE Y level 3-3
  3.3.3 PB Y level (S-VHS / VHS) 3-3
  3.3.4 REC color (colour) level 3-4
  3.3.5 Video EQ (Frequency response) 3-4
  3.3.6 AUTO PICTURE initial setting 3-5
3.4 AUDIO CIRCUIT 3-5
  3.4.1 Audio REC FM 3-5
3.5 SYSCON CIRCUIT 3-5
  3.5.1 Timer clock 3-5

4. CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM 4-1
CIRCUIT BOARD NOTES 4-2
4.1 BOARD INTERCONNECTIONS 4-3
4.2 VIDEO/AUDIO AND AUDIO ERASE SCHEMATIC DIAGRAMS 4-5
4.3 SYSTEM CONTROL SCHEMATIC DIAGRAM 4-7
4.4 SWITCHING REGULATOR SCHEMATIC DIAGRAM 4-9
4.5 TUNER SCHEMATIC DIAGRAM 4-11
4.6 CONNECTION SCHEMATIC DIAGRAM 4-13
4.7 2D DIGITAL SCHEMATIC DIAGRAM [HR-S6700EK/EU] 4-15
4.8 3D DIGITAL/2M SCHEMATIC DIAGRAM [HR-S7700EK/EU] 4-17
4.9 TERMINAL SCHEMATIC DIAGRAM 4-19
4.10 DEMODULATOR SCHEMATIC DIAGRAM 4-21
4.11 S-SUB SCHEMATIC DIAGRAM 4-23
4.12 SWITCH/DISPLAY, REC SAFETY, JACK AND SHUTTLE/PLAY SCHEMATIC DIAGRAMS [HR-S6700EK/EU] 4-25
4.13 SWITCH/DISPLAY, REC SAFETY, JACK AND JOG SCHEMATIC DIAGRAMS [HR-S7700EK/EU] 4-27
4.14 MAIN, AUDIO ERASE, A/C HEAD AND LOADING MOTOR CIRCUIT BOARDS 4-29
4.15 2D DIGITAL CIRCUIT BOARD [HR-S6700EK/EU] 4-33
4.16 3D DIGITAL/2M CIRCUIT BOARD [HR-S7700EK/EU] 4-34
4.17 TERMINAL CIRCUIT BOARD 4-35
4.18 DEMODULATOR CIRCUIT BOARD 4-37
4.19 S-SUB CIRCUIT BOARD 4-39
4.20 SWITCH/DISPLAY, REC SAFETY, JACK AND SHUTTLE/PLAY CIRCUIT BOARDS [HR-S6700EK/EU] 4-41
4.21 SWITCH/DISPLAY, REC SAFETY, JACK AND JOG CIRCUIT BOARDS [HR-S7700EK/EU] 4-43
4.22 FDP GRID ASSIGNMENT AND ANODE CONNECTION [HR-S6700EK/EU] 4-45
4.23 FDP GRID ASSIGNMENT AND ANODE CONNECTION [HR-S7700EK/EU] 4-46
4.24 REMOTE CONTROL SCHEMATIC DIAGRAM 4-47
4.25 VOLTAGE CHARTS 4-48
4.26 SYSTEM CONTROL BLOCK DIAGRAM 4-53
4.27 VIDEO BLOCK DIAGRAM 4-55
4.28 AUDIO BLOCK DIAGRAM 4-59

5. PARTS LIST

5.1 PACKING AND ACCESSORY ASSEMBLY <M1> 5-1
5.2 CABINET AND CHASSIS ASSEMBLY <M2> 5-2
5.3 MECHANISM ASSEMBLY <M4> 5-4
5.4 ELECTRICAL PARTS LIST 5-6
  MAIN BOARD ASSEMBLY <03> 5-6
  2D DIGITAL BOARD ASSEMBLY(S6700EK/EU)<05> 5-12
  3D DIGITAL BOARD ASSEMBLY (S7700EK/EU)<05> 5-13
  TERMINAL BOARD ASSEMBLY <06> 5-14
  AUDIO CONTROL HEAD BOARD ASSEMBLY <12> 5-16
  DEMOD BOARD ASSEMBLY <14> 5-16
  S-SUB BOARD ASSEMBLY <15> 5-17
  SW/DISPLAY BOARD ASSEMBLY (S6700EK/EU)<28> 5-17
  SW/DISPLAY BOARD ASSEMBLY (S7700EK/EU)<28> 5-18
  REC SAFETY BOARD ASSEMBLY (S6700EK/EU)<32> 5-19
  REC SAFETY BOARD ASSEMBLY (S7700EK/EU)<32> 5-19
  JACK BOARD ASSEMBLY(S6700EK/EU)<36> 5-19
  JACK BOARD ASSEMBLY (S7700EK/EU)<36> 5-19
  JOG BOARD ASSEMBLY (S7700EK/EU)<37> 5-19
  AUDIO ERASE BOARD ASSEMBLY <46> 5-19
  LOADING MOTOR BOARD ASSEMBLY <55> 5-19
  SHUTTLE/PLAY BOARD ASSEMBLY(S6700EK/EU)<85> 5-19

The following table lists the differing points between Models (HR-S6700EK/EU and HR-S7700EK/EU) in this series.

	HR-S6700EK	HR-S6700EU	HR-S7700EK	HR-S7700EU
POWER PLUG	3PIN	CEE	3PIN	CEE
VIDEO SYSTEM	PAL/NTSC PB ON PAL TV	PAL/MESECAM(MANUAL) /NTSC PB ON PAL TV	PAL/NTSC PB ON PAL TV	PAL/MESECAM(MANUAL) /NTSC PB ON PAL TV
FLYING ERASE HEAD	NOT USED	NOT USED	USED	USED
INSERT EDIT	NOT USED	NOT USED	USED	USED
DIGITAL 3R	NOT USED	NOT USED	USED	USED
TBC/3D-MEMORY	NOT USED	NOT USED	USED/2M	USED/2M
AUDIO DUBBING	NOT USED	NOT USED	USED	USED
HiFi LEVEL METER	NOT USED	NOT USED	USED	USED
VCR PLUS+	VIDEO PLUS+ DELUXE	SHOWVIEW DELUXE	VIDEO PLUS+ DELUXE	SHOWVIEW DELUXE
RE-TAKE	NOT USED	NOT USED	USED	USED
R.PAUSE	NOT USED	NOT USED	USED	USED

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

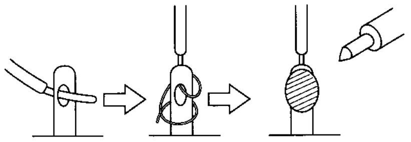


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

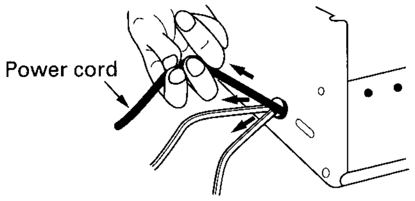


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

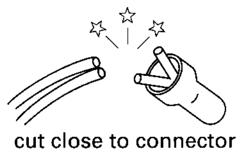


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

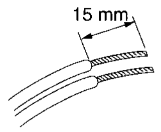


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

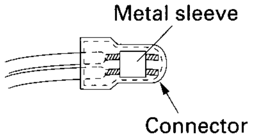


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

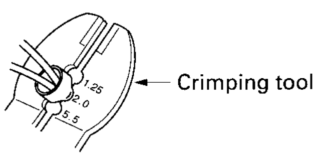


Fig.6

(5) Check the four points noted in Fig.7.

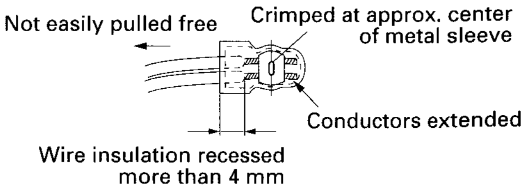

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

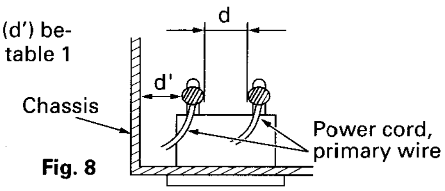


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method : (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

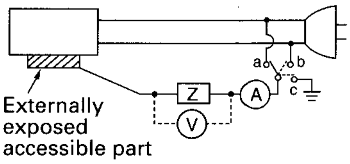


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

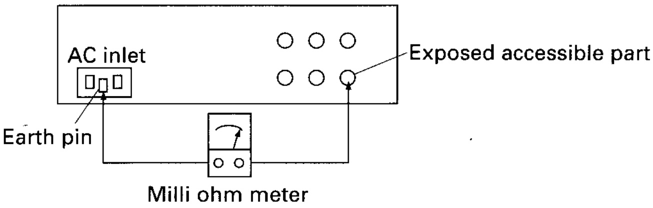


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 µF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS [This instruction manual is for HR-S7700EK/S7722EK]

Safety Precautions

The rating plate and the safety caution are on the rear of the unit.

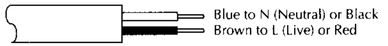
WARNING: DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT

- Please read the various precautions on page 2 – 4 of this instruction manual before installing or operating the recorder.
- It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

IMPORTANT

Connection to the mains supply in the United Kingdom.
DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain a proper safety approved extension lead/adapter or consult your dealer.
In the unlikely event of the plug fuse failing be sure to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover. If the fuse fails again consult your nearest JVC dealer.
If nonetheless the mains plug is cut off remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.
If this product is not supplied fitted with a mains plug then follow the instructions given below:
DO NOT make any connection to the Larger Terminal coded E or Green.
The wires in the mains lead are coloured in accordance with the following code:



If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a competent electrician.

- Cassettes marked "S-VHS" and "VHS" can be used with this video cassette recorder. However, S-VHS recordings are possible only with cassettes marked "S-VHS".
  By using the S-VHS ET function, it is possible to record and play back with S-VHS picture quality on VHS cassettes with this recorder.
- VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.

CAUTION

- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the mains outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the mains outlet prior to connecting or disconnecting any signal lead or aerial.

The STANDBY/ON ⏻/I button does not completely shut off mains power from the unit, but switches operating current on and off. " ⏻ " shows electrical power standby and " I " shows ON.

Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.

Failure to heed the following precautions may result in damage to the recorder, remote control or video cassette.

1. DO NOT place the recorder . . .
   ... in an environment prone to extreme temperatures or humidity.
   ... in direct sunlight.
   ... in a dusty environment.
   ... in an environment where strong magnetic fields are generated.
   ... on a surface that is unstable or subject to vibration.
2. **DO NOT block the recorder's ventilation openings.**
3. **DO NOT place heavy objects on the recorder or remote control.**
4. **DO NOT place anything which might spill on top of the recorder or remote control.**
5. **AVOID violent shocks to the recorder during transport.**

MOISTURE CONDENSATION

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions—just as water droplets form in the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder turned on for a few hours to let the moisture dry.

Some Do's And Don'ts On The Safe Use Of Equipment

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO read the operating instructions before you attempt to use the equipment.

DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

DO consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.

DO be careful with glass panels or doors on equipment.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off, withdraw the mains plug and consult your dealer.

DON'T remove any fixed cover as this may expose dangerous voltages.

DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.

DON'T use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.

DON'T listen to headphones at high volume, as such use can permanently damage your hearing.

DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.

DON'T use makeshift stands and NEVER fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

DON'T allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL...

— **NEVER** let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock;

— **NEVER** guess or take chances with electrical equipment of any kind — it is better to be safe than sorry!

▶ Dear Customer,

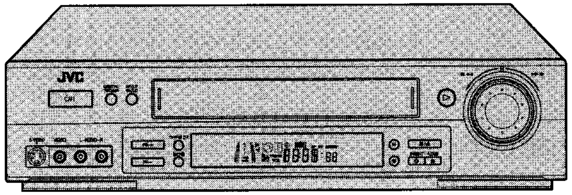
Thank you for purchasing this JVC Video Cassette Recorder.

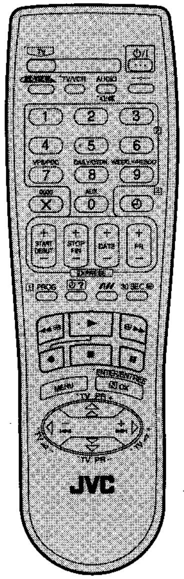
Please use this **QUICK SET UP GUIDE** to help you to set up your video cassette recorder.

STEP 1 CHECK THE CONTENTS

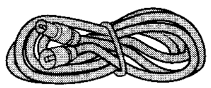
CHECK ALL THE CONTENTS SHOWN BELOW

Video Cassette Recorder

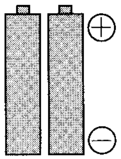




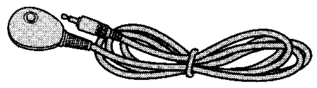
Infrared Remote Control Unit



RF Cable



"AA" Batteries (x 2)



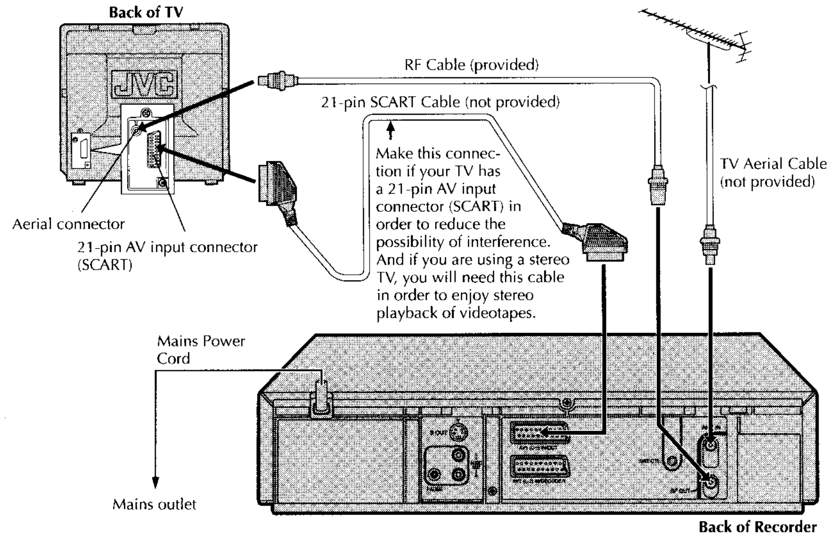
Satellite Controller

▶ You are now ready to install your video recorder.

STEP 2 INSTALLATION

CONNECT VIDEO RECORDER TO TV

▶ Place the recorder on a stable, flat surface.


Back of TV
RF Cable (provided)
21-pin SCART Cable (not provided)
Make this connection if your TV has a 21-pin AV input connector (SCART) in order to reduce the possibility of interference. And if you are using a stereo TV, you will need this cable in order to enjoy stereo playback of videotapes.
TV Aerial Cable (not provided)
Aerial connector
21-pin AV input connector (SCART)
Mains Power Cord
Mains outlet
Back of Recorder

RF CONNECTION

To connect to a TV with NO 21-pin AV input connector (SCART) . . .

1– Disconnect the TV aerial cable from the TV.
2– Connect the TV aerial cable to the ANT. IN jack on the rear panel of the recorder.
3– Connect the provided RF cable between the RF OUT jack on the rear panel of the recorder and the TV's aerial connector.

AV CONNECTION

To connect to a TV with 21-pin AV input connector (SCART) . . .

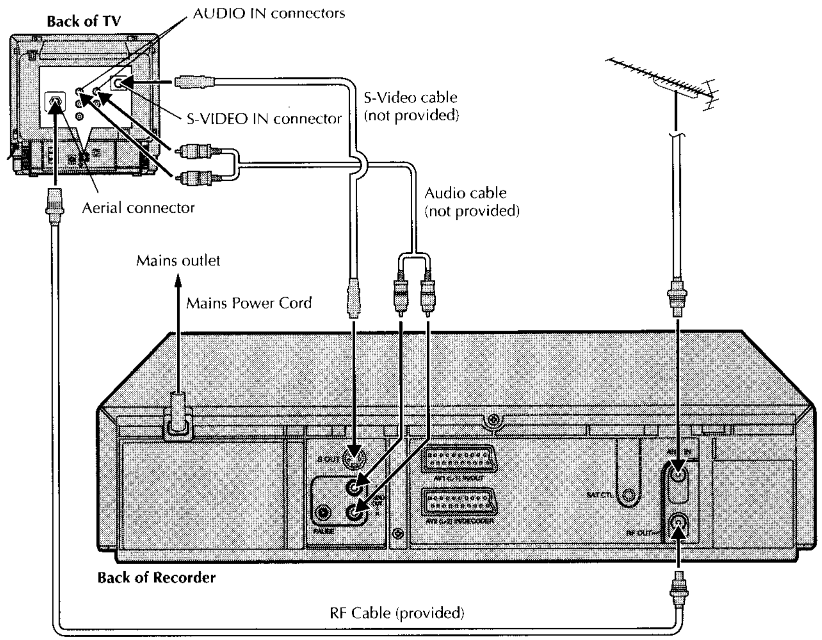
1– Connect the aerial, recorder and TV as per "RF CONNECTION".
2– Connect an optional SCART cable between the AV1 (L-1) IN/OUT socket on the rear panel of the recorder and the TV's 21-pin AV input connector (SCART).

NOTES:

- *The AV1 (L-1) IN/OUT connector accepts and delivers either a composite signal (regular video signal) or a Y/C signal (a signal in which the luminance and chrominance signals are separated). If your TV's 21-pin AV input connector (SCART) is compatible with the Y/C signal, set "L-1 OUTPUT" to "S-VIDEO" after the connection and the initial settings are completed (☞ pg. 36). You can obtain high-quality S-VHS pictures. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)*
- *Set your TV to the VIDEO (or AV), Y/C, or RGB mode according to the type of your TV's SCART connector.*
- *For switching the TV's mode, refer to the instruction manual of your television.*
- *To obtain high-quality S-VHS pictures, you can also use the S-VIDEO CONNECTION described on page 7.*

ATTENTION

- Do NOT Plug the mains power cord into a mains outlet until all connections are completed.
- Do NOT press the ⏻/I button on the recorder or on the remote control to turn on the recorder's power before you start the Auto Set Up procedure described on page 8.


Back of TV
AUDIO IN connectors
S-VIDEO IN connector
S-Video cable (not provided)
Audio cable (not provided)
Aerial connector
Mains outlet
Mains Power Cord
Back of Recorder
RF Cable (provided)

S-VIDEO CONNECTION

To connect to a TV with S-VIDEO/AUDIO IN connectors . . .

1– Connect the aerial, recorder and TV as per "RF CONNECTION" (☞ pg. 6).
2– Connect the recorder's S OUT connector to the TV's S-VIDEO IN connector.
3– Connect the recorder's AUDIO OUT connectors to the TV's AUDIO IN connectors.

NOTES:

- *You can obtain high-quality S-VHS pictures.*
- *With S-VIDEO connection, you cannot use the Preset Download function. (☞ pg. 9)*
- *If your television is not stereo-capable, use the recorder's AUDIO OUT connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction. (☞ pg. 44)*
- *To operate the recorder with your TV using the S-VIDEO connection, set your TV to the VIDEO (or AV mode).*
- *For switching the TV's mode, refer to the instruction manual of your television.*

ATTENTION

- Do NOT Plug the mains power cord into a mains outlet until all connections are completed.
- Do NOT press the ⏻/I button on the recorder or on the remote control to turn on the recorder's power before you start the Auto Set Up procedure described on page 8.

AFTER YOU FINISH THIS STEP ▷ *Go to Step 3 – AUTO SET UP*

STEP 3

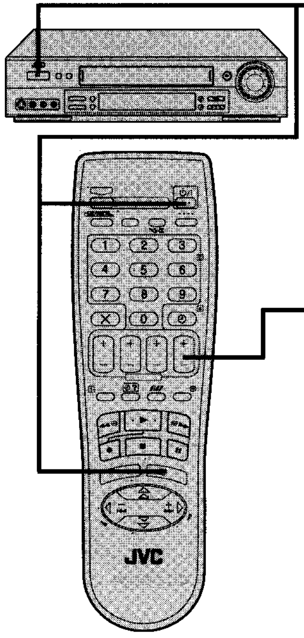
AUTO SET UP

SET THE TUNER CHANNELS, CLOCK, GUIDE PROGRAM NUMBERS AND VIDEO CHANNEL*

The Auto Set Up function sets the tuner channels, clock, the VIDEO Plus+ assigned Guide Program numbers and the video channel* automatically the first time the ⏻/I button on the recorder or on the remote is pressed to turn on the recorder after the mains power cord has been plugged into a mains outlet.

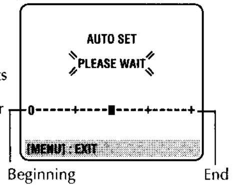
** Useful if you have connected the video recorder to your TV via RF connection (☞ pg. 6). Video Channel (RF output channel) is the channel on which your TV receives picture and sound signals from the video recorder through the RF cable.*

Before performing the following procedure, make sure that:
- ■ the TV aerial cable is connected to the recorder.
- ■ the mains power cord is plugged into the mains outlet.
- ■ batteries have been installed in the remote control.



1 Press ⏻/I. If "Auto" appears on the display panel, press **OK** or ▷. "Auto" blinks; do NOT press any button on the recorder or remote control until the display panel shows either the display as illustrated below in item 2 or "– – :– –". Auto Set Up usually takes about 4 – 12 minutes; the duration varies by area.

- If "– –:– –" appears on the display panel, refer to page 10.
- With the AV or S-VIDEO connection (☞ pg. 6, 7), if the TV is turned on and set to its AV mode, the AUTO SET screen will appear.
- When you have connected the video recorder to a TV offering T-V Link via the AV connection (☞ pg. 6) and the TV is turned on, the recorder automatically performs the Preset Download (☞ pg. 9) even if you select "Auto" for Auto Set Up function.



2
- ***If you have connected the video recorder to your TV via the provided RF cable only (RF connection)*** — the channel that is shown on the display panel is your Video Channel.
  To view picture signals from the video recorder, set your TV to the Video Channel. — Refer to the instructions supplied with your TV set for how to do this.
  Go to item 3.

- ***If you have connected the video recorder to your TV via both the provided RF cable and a 21-pin SCART cable (AV connection)*** — you do not need the video channel so you have to set the video channel to off.
  Press **PR** – until the display panel shows "_OUT– –" to set the Video Channel to off.
  To view picture signals from the video recorder, set your TV to its AV mode. — Refer to the instructions supplied with your TV set for how to do this.
  Go to item 3.

3 Press **OK** to finish Auto Set Up and refer to page 10 to check the results.

ATTENTION

Once you have performed Auto Set Up, all the stored stations, Guide Program numbers and the video channel remain in the recorder's memory and the recorder will not perform Auto Set Up again. If there is a power cut and the recorder's memory backup expires you only need to reset the clock. (☞ pg. 55)

If you have moved to a different area, perform each setting as required.
- ■ Video Channel setting (for RF connection users) ☞ pg. 46
- ■ Tuner setting ☞ pg. 48
- ■ Clock setting ☞ pg. 55

If a new station begins broadcasting in your area, perform tuner setting (☞ pg. 48) and, if necessary, video channel setting (☞ pg. 46).

NOTES:

- *Auto channel set function takes place first; it assigns automatically all receivable stations in your area.*
- *Auto clock set function sets the clock automatically.*
- *During auto channel set, the recorder recognizes each station name of the detected stations and stores them in the recorder's memory, then automatically sets the VIDEO Plus+ assigned Guide Program numbers for those stations according to the broadcast area.*
- ***For RF connection users:*** *The video recorder detects the channels which are not occupied by local stations and selects one channel automatically for your Video Channel that is located in the middle of more than 5 vacant channels.*
- *If there is a power cut or if you press ⏻/I or **MENU** while Auto Set Up is in progress, Auto Set Up will be interrupted; be sure to turn off the recorder power once and press ⏻/I to turn the power back on in order to re-start Auto Set Up.*

PRESET DOWNLOAD

SET THE TUNER CHANNELS BY DOWNLOADING FROM YOUR TV, CLOCK AND GUIDE PROGRAM NUMBERS

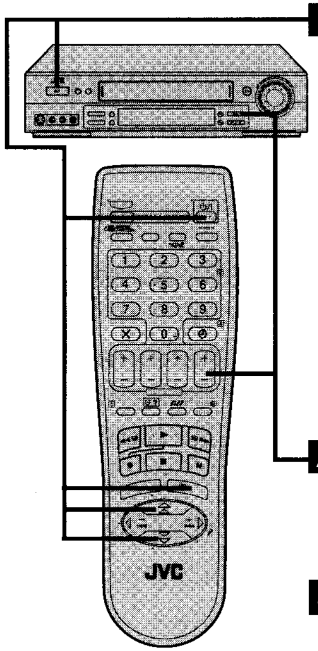
When you connect the recorder and your TV via fully-wired 21-pin SCART cable (☞ pg. 6), you can set the recorder's tuner channels by downloading preset data from your TV instead of using the Auto Set Up function (☞ pg. 8). After downloading is completed, the recorder sets the clock and the VIDEO Plus+ assigned Guide Program numbers automatically.
For details, refer to the instruction manual for your TV.

ATTENTION

You can use this function only with a TV offering T-V Link, etc.*

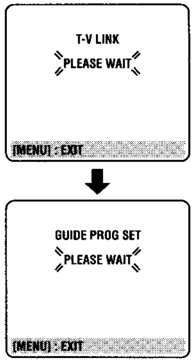
** Compatible with TVs offering T-V Link, EasyLink, Megalogic, SMARTLINK, Q-Link, DATA LOGIC or NexTView Link via fully-wired 21-pin SCART cable. The degree of compatibility and available functions may differ by system.*

Before performing the following procedure, make sure that:
- ■ the TV aerial cable is connected to the recorder and a 21-pin SCART cable is connected between your TV and the recorder.
- ■ the mains power cord is plugged into the mains outlet.
- ■ batteries have been installed in the remote control.

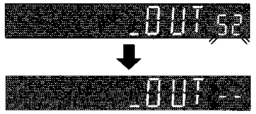


1 Press ⏻/I. If "Auto" appears on the display panel, Press △▽ to select "CH – –" and press **OK** or ▷. Preset position on the display panel increases from "CH1"; do NOT press any button on the recorder or remote control until the display panel shows either the display as illustrated on page 8 or "– – :– –".

- If "– –:– –" appears on the display panel, refer to page 10.
- If you are using the on-screen display, the T-V LINK screen will appear. Then the GUIDE PROG SET screen will appear during Guide Program number set.
- If you press any button on the recorder or remote control while downloading is in progress, this process will be interrupted and you will need to start again. See NOTES below.



2 Press ⏻/I to turn off the recorder. Press and hold down **STOP** on the recorder until the display panel shows the display as illustrated on the right. Press **PR** – until the display panel shows "_OUT– –" to set the Video Channel to off.

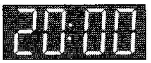


3 Press **OK** to exit Video Channel Set mode.
To view picture signals from the video recorder, set your TV to its AV mode. — Refer to the instructions supplied with your TV set for how to do this.

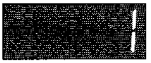
NOTES:

- *In areas where no TV station transmits the PDC signal, the recorder cannot perform either auto clock set or auto Guide Program number set.*
- *If there is a power cut, or if you press ⏻/I or **MENU** while downloading or set up is in progress, it will be interrupted; be sure to turn off the recorder power once and try again from the beginning.*
- *Auto clock may not function properly depending on reception conditions.*
- *When you perform Preset Download, be sure to use fully-wired 21-pin SCART cable.*
- *On this recorder, the characters available for station names (ID) are A–Z, 0–9, –, *, + and ␣ (space). The names of some downloaded stations may differ from those on your TV (☞ pg. 52).*

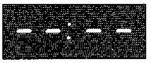
Auto Set Up/Preset Download results appear on the display panel

A 

When both auto channel set and auto clock set have been completed successfully the correct current time will be displayed after the **OK** button is pressed in item **3** on page 8 or after performing item **1** on page 9.

B 

When auto channel set has been completed successfully but auto clock set has not, "(PR)1" will be displayed after the **OK** button is pressed in item **3** on page 8 or after performing item **1** on page 9.

C 

When neither auto channel set nor auto clock set has been completed successfully, "– –:– –" will be displayed.

* You can check if the Guide Program numbers have been set correctly when you perform VIDEO Plus+ Timer Programming (☞ pg. 18); if the correct preset position number is displayed in step **3**, this confirms that the Guide Program number for the PlusCode number you enter in step **2** has been set correctly.

A If both auto channel set and auto clock set have been performed successfully:

1 Turn on the TV and select its VIDEO channel or AV mode, then make sure that all necessary stations have been stored in the recorder's memory by using the **PR** button(s).
- If station names (ID — ☞ pg. 53) have also been stored in the recorder's memory, the station name will be displayed at the top left corner of the screen for about 5 seconds each time the recorder is tuned to a different station.
- If you want to set the tuner manually such as to add or skip channels, to change preset positions, or to set or change station names, see pages 50 – 52.

Now you have finished the basic set up and can use your recorder for both playback and recording.

B If auto channel set has succeeded but auto clock set has not:

1 Turn on the TV and select its VIDEO channel or AV mode, then make sure that all necessary stations have been stored in the recorder's memory by using the **PR** button(s).
- If station names (ID — ☞ pg. 53) have also been stored in the recorder's memory, the station name will be displayed at the top left corner of the screen for about 5 seconds each time the recorder is tuned to a different station.
- If you want to set the tuner manually such as to add or skip channels, to change preset positions, or to set or change station names, see pages 50 – 52.

2 Perform "Clock Set" on page 55.

Now you have finished the basic set up and can use your recorder for both playback and recording.

C If both auto channel set and auto clock set have failed:

1 Make sure that the TV aerial cable is connected properly to the recorder (for RF connection), or that the 21-pin SCART cable is connected properly between TV and the recorder (for AV connection). Turn off the recorder power once, then turn the recorder power back on again.

2 Perform "Auto Set Up" on page 8 or "Preset Download" on page 9.

IMPORTANT

- In certain reception conditions, station names may not be stored correctly, and auto Guide Program Number Set may not work properly. If the Guide Program numbers are not set properly, when you timer-record a TV programme using the VIDEO Plus+ system, the recorder will record a TV programme of a different station. When programming the timer using the VIDEO Plus+ system, be sure to check that the preset position corresponding to the broadcasting station you wish to record has been selected (☞ pg. 18, "VIDEO Plus+ Timer Programming").
- Your video recorder memorizes all detected stations even if reception of some of them is poor. In these cases picture quality may be poor. To delete those stations which have an unacceptable picture ☞ "Delete A Channel" on page 51.
- If any of the above problems occur, refer to pages 50 – 52 to input station names (☞ "Set Stations") or delete unnecessary stations (☞ "Delete A Channel"). You can also change station preset positions (☞ "Change Station Preset Position").
- **For RF connection users:** In certain reception conditions, the Video Channel may not be set correctly and interference may appear in the TV picture while the recorder's power is on. Set your Video Channel manually. ☞ pg. 46, "Video Channel Set".

If you have any difficulty with the above procedures call the JVC Customer Service Hot Line on 020 8208 7654

T-V Link Functions

When you connect the recorder and your TV via a fully-wired 21-pin SCART cable (☞ pg. 6), the following functions are available. You can use these functions only with a TV offering T-V Link, etc.*
For details, refer to the instruction manual for your TV.

* *Compatible with TVs offering T-V Link, EasyLink, Megalogic, SMARTLINK, Q-Link, DATA LOGIC or NexTView Link via fully-wired 21-pin SCART cable. The degree of compatibility and available functions may differ by system.*

NexTView Link

You can download the EPG (Electronic Programme Guide) information from your TV for timer-programming on the recorder.
For details, refer to the instruction manual for your TV.

TV Auto Power On

You can turn on the TV and set it to video mode automatically whenever you play a tape.
For details, refer to the instruction manual for your TV.

VCR Auto Standby

You can use your TV's remote control to turn off the recorder.
For details, refer to the instruction manual for your TV.

Direct Rec

You can start recording the programme that you are watching on your TV with simple operation. Press and hold **RECORD** and press **PLAY** on the remote control, or press **RECORD** on the recorder.
Follow the procedure below to use this function.

Turn on the TV and select the VIDEO channel (or AV mode).

1 TURN ON THE RECORDER

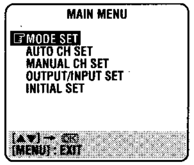
Press ⏻/I.

2 ACCESS MAIN MENU SCREEN

Press **MENU**.

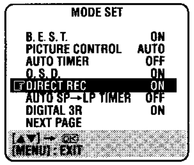
3 ACCESS MODE SET SCREEN

Press △▽ to move the highlight bar (pointer) to "MODE SET", then press **OK** or ▷.



4 SELECT DIRECT REC MODE

Press △▽ to move the highlight bar (pointer) to "DIRECT REC", then press **OK** or ▷ to set to "ON".



MODE SET
B. E. S. T. ON
PICTURE CONTROL AUTO
AUTO TIMER OFF
O. S. D. ON
☞DIRECT REC ON
AUTO SP→LP TIMER OFF
DIGITAL 3R ON
NEXT PAGE

5 RETURN TO NORMAL SCREEN

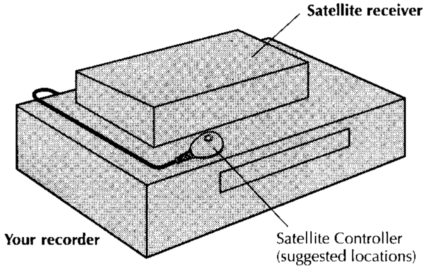
Press **MENU**.

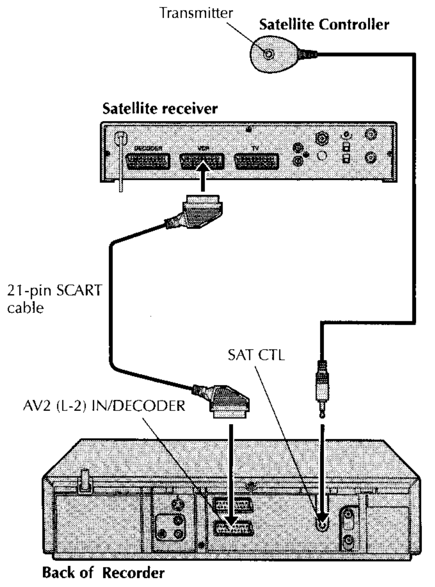
NOTES:

- *If "DIRECT REC" is set to "OFF", the **RECORD** button functions as described in "Recording" (☞ pg. 16).*
- *During the Direct Rec, "– –" appears on the display panel.*
- *When you perform T-V LINK functions, be sure to use a fully-wired 21-pin SCART cable.*
- *Direct Rec is not possible with a scrambled broadcast.*
- *To record a scrambled broadcast, set "DIRECT REC" to "OFF" and follow the procedure described in "Recording" on page 16.*
- *Retake function (☞ pg. 43) does not work during Direct Rec.*

Satellite Receiver Control Setting

The following procedure is required if you receive satellite channels through a satellite receiver. Around 20 seconds before VIDEO Plus+ timer recording (☞ pg. 18) or Express timer programming (☞ pg. 20) starts, the recorder sets its input mode to "L-2" and automatically switches the satellite receiver's channels using the provided Satellite Controller.





Installing Satellite Controller

1 SITUATE SATELLITE CONTROLLER

Place the Satellite Controller so that the path between its transmitter and the satellite receiver's remote sensor is unobstructed.

2 ATTACH SATELLITE CONTROLLER

Fix securely using the adhesive strip attached on the back of the Satellite Controller.

3 MAKE CONNECTIONS

Be sure to connect the recorder's AV2 (L-2) IN/DECODER connector to the satellite receiver's 21-pin SCART connector.

NOTE:

When connecting your satellite receiver, refer to its instruction manual.

4 CONNECT SATELLITE CONTROLLER TO RECORDER

Connect the Satellite Controller to the SAT CTL connector on the rear panel.

Setting satellite receiver's brand and channel

After installation, set the satellite receiver's brand and channel correctly; otherwise, the Satellite Controller cannot work correctly.

Turn on the TV and select the VIDEO channel (or AV mode).

1 TURN ON SATELLITE RECEIVER

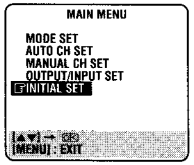
Turn on the satellite receiver's power.

2 ACCESS MAIN MENU SCREEN ON RECORDER

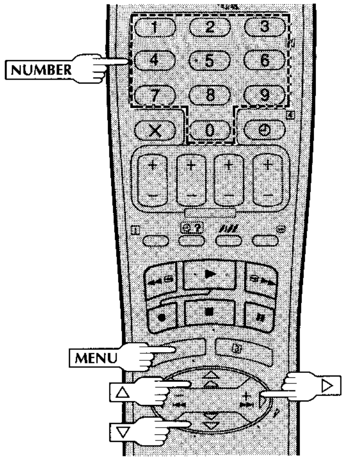
Press **MENU**.

3 ACCESS INITIAL SET SCREEN

Press ∆∇ to move the highlight bar (pointer) to "INITIAL SET", then press **OK** or ▷.



MAIN MENU
MODE SET
AUTO CH SET
MANUAL CH SET
OUTPUT/INPUT SET
☞INITIAL SET
[▲▼] → OK
[MENU] : EXIT



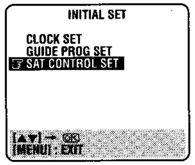
SATELLITE TUNER BRAND	CODE
JVC	73
AMSTRAD	60, 61, 62, 63, 92
CANAL SATELLITE	81
CANAL +	81
D-BOX	85
ECHOSTAR (VIA DIGITAL)	82
FINLUX	68
FORCE	89
GALAXIS	88
GRUNDIG	64, 65
HIRSCHMANN	64, 78
ITT NOKIA	68
JERROLD	75
KATHREIN	70, 71
LUXOR	68
MASCOM	93
MASPRO	70
NOKIA	87
PACE	65, 67, 74, 86, 92
PANASONIC	74
PHILIPS	66, 84
RFT	69
SAGEM	83
SALORA	68
SIEMENS	64
SKYMASTER	69
TPS	83
TRIAX	91
WISI	64

NOTES:

- *The Satellite Controller may not work with all types of satellite receiver.*
- *For some satellite receivers, you need to set its channel input mode to 2-digit.*
- *If your satellite receiver has more than two channel mode, be sure to set to "All Channel Mode". For details, refer to the instruction manual of the satellite receiver.*
- *When selecting the satellite receiver's channel (☞ step 6), signals from the remote control may interfere with signals transmitted from the Satellite Controller. In this case, move the remote control as close to the recorder's infrared beam receiving window as possible.*

4 ACCESS SAT CONTROL SET SCREEN

Press ∆∇ to move the highlight bar (pointer) to "SAT CONTROL SET", then press **OK** or ▷.

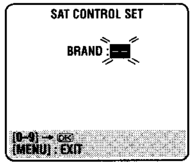


INITIAL SET
CLOCK SET
GUIDE PROG SET
☞SAT CONTROL SET
[▲▼] → OK
[MENU] : EXIT

5 ENTER SATELLITE RECEIVER'S BRAND

Press the appropriate **NUMBER** keys to enter the brand code from the list in the left column, then press **OK**.

- If the brand code you entered is invalid, the code field is reset. Enter the correct brand code again.
- If the recorder is in playback or recording mode, you cannot set the brand code.

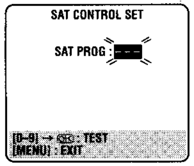


SAT CONTROL SET
BRAND : ■
[0-9] → OK
[MENU] : EXIT

6 SELECT SATELLITE RECEIVER'S CHANNEL FOR TESTING

Press the appropriate **NUMBER** keys to enter one of the channel positions on the satellite receiver, then press **OK**.

- You can select the channel position between 1 to 999.
- After pressing **OK**, the recorder enters the Test mode.

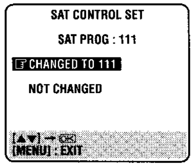


SAT CONTROL SET
SAT PROG : ■ – –
[0-9] → OK : TEST
[MENU] : EXIT

7 CHECK RESULT OF TEST

If the satellite receiver's channel number has been changed to the same channel as you set in step 6...

Press ∆∇ to move the highlight bar (pointer) to "CHANGED TO ...", then press **OK** or ▷ to finish the Sat Control Set mode.



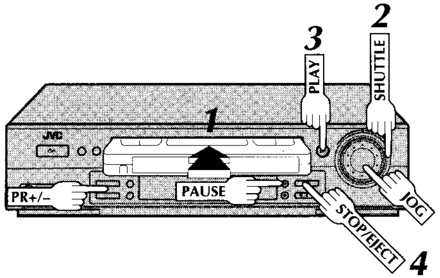
SAT CONTROL SET
SAT PROG : 111
☞CHANGED TO 111
NOT CHANGED
[▲▼] → OK
[MENU] : EXIT

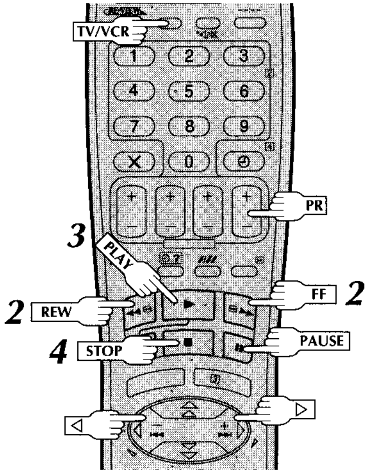
If the satellite receiver's channel number has not been changed correctly...

Press ∆∇ to move the highlight bar (pointer) to "NOT CHANGED", then press **OK** or ▷. Then perform the procedure again from step **5**.

Playback

Turn on the TV and select the VIDEO channel (or AV mode).

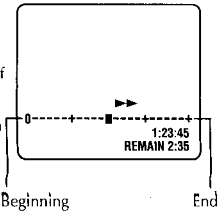




Tape Position Indicator

The tape position indicator appears on screen when, from the Stop mode, you press **FF**, **REW** or perform an Index Search. The position of "■" in relation to "0" (beginning) or "+" (end) shows you where you are on the tape.

"O.S.D." (☞ pg. 40) must be set to "ON", or the indicator will not appear.



NOTE:

Depending on the type of tape used, there may be times when the indication is not correct.

The easiest, most basic operation possible with your video recorder is tape playback. Already-recorded signals on a video tape are read by your video recorder and displayed on your TV just like a TV programme.

1 LOAD A CASSETTE

Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointing towards the recorder. Don't apply too much pressure when inserting.

- The recorder power comes on automatically and the counter is reset to 0:00:00.
- If the record safety tab has been removed, playback begins automatically.

2 FIND PROGRAMME START POINT

If the tape is advanced past the start point, press **REW** or turn the **SHUTTLE** ring to the left. To go forward, press **FF** or turn the **SHUTTLE** ring to the right.

3 START PLAYBACK

Press **PLAY**. "BEST" appears blinking in the recorder's display panel during automatic tracking (☞ pg. 28).

- Playback picture quality of LP recordings will not be as high as SP recordings.

4 STOP PLAYBACK

Press **STOP** on the remote or **STOP/EJECT** on the recorder's front panel. Then press **STOP/EJECT** to remove the cassette.

Clean the video heads using a dry cleaning cassette — JVC TCL-2U — when:

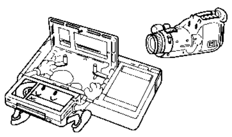
- Rough, poor picture appears while a tape is played back.
- The picture is unclear or no picture appears.
- "USE CLEANING CASSETTE" appears on the screen (only with "O.S.D." set to "ON" (☞ pg. 40.)

INFORMATION

When using the AV connection (☞ pg. 6), initiating playback causes the VCR indicator to light and the TV to automatically enter AV mode. To return the TV to TV mode after playback is complete, press **TV/VCR** so that the VCR indicator turns off.

* Depending on the type of TV used, **TV/VCR** button does not always function as described above.

Usable cassettes

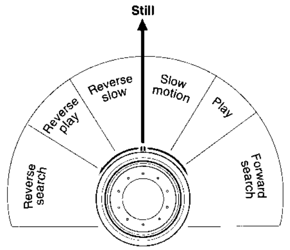


- Compact VHS camcorder recordings can be played on this video recorder. Simply place the recorded cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.
- This video recorder can record on regular VHS and Super VHS cassettes. While only VHS signals can be recorded on regular VHS cassettes*, both VHS and Super VHS signals can be recorded and played back using Super VHS cassettes.

** By using the S-VHS ET function, it is possible to record and play back with S-VHS picture quality on VHS cassettes with this recorder.*

NOTE:

*Refer to the **SHUTTLE** ring illustration below as you read the following procedures.*



Still Picture/Frame-By-Frame Playback

1 PAUSE DURING PLAYBACK

Press **PAUSE.** If there is vertical jitter, use the **PR** buttons to correct the picture.

2 ACTIVATE FRAME-BY-FRAME PLAYBACK

Turn the **JOG** dial to the right for forward frame-by-frame playback, or to the left for reverse frame-by-frame playback.

OR

Press **PAUSE**. Each time **PAUSE** is pressed the tape will advance one frame.

OR

Press ◁ or ▷. Each time one of these buttons is pressed the tape will move one frame in the direction of the arrow.

To resume normal playback, press **PLAY**.

Slow Motion

1 ACTIVATE SLOW-MOTION PLAYBACK

During playback or still picture, turn the **SHUTTLE** ring to the right for forward slow motion, or to the left for reverse slow motion (refer to the illustration above).

OR

During still picture, press and hold **PAUSE** for 2 seconds, then release. Press and release again to return to still picture.

OR

During still picture, press and hold ◁ or ▷. Release to return to still picture.

To resume normal playback, press **PLAY**.

Variable-Speed Search

1 ACTIVATE VARIABLE-SPEED SEARCH

During playback or still, turn the **SHUTTLE** ring to the right for forward variable-speed search, or to the left for reverse variable-speed search (refer to the illustration on the left).

OR

During playback, press ◁ or ▷.

- The more times you press, the faster the playback picture moves.
- To decrease speed, press the button for the opposite direction.

To resume normal playback, press **PLAY**.

High-Speed (Turbo) Search

1 ACTIVATE HIGH-SPEED SEARCH

During playback or still, turn the **SHUTTLE** ring all the way to the right for forward high-speed search, or to the left for reverse high-speed search. Releasing **SHUTTLE** resumes still picture playback.

- For forward high-speed search, turn the **SHUTTLE** ring all the way to the right and release it within 1 second.
- For reverse high-speed search, turn the **SHUTTLE** ring all the way to the left and release it within 1 second.

OR

During playback or still picture, press **FF** for forward high-speed search, or **REW** for reverse high-speed search.

To resume normal playback, press **PLAY**.

NOTE:

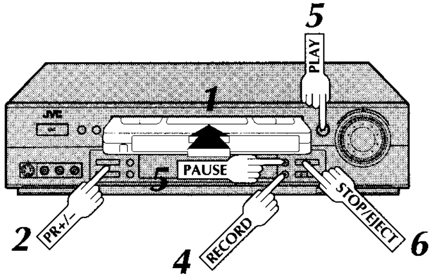
*For short searches, press and hold **FF** or **REW** during playback or still picture. When released, normal playback resumes.*

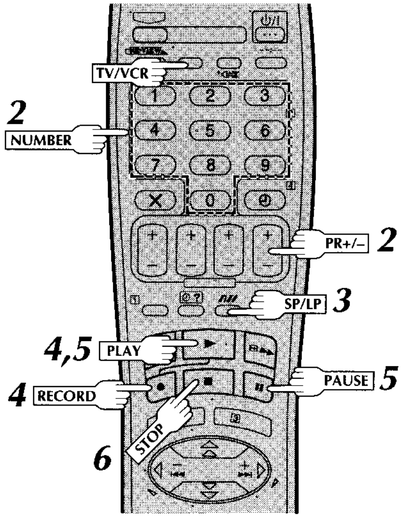
ATTENTION

- In the high-speed search, still, slow-motion or frame-by-frame playback mode,
  - the picture will be distorted.
  - noise bars will appear.
  - there will be a loss of colour with a tape recorded in LP mode.
- Picture may not appear during high-speed search with a tape recorded in LP mode.
- When normal playback resumes from search, still, slow motion or frame-by-frame playback, the picture may jitter vertically momentarily depending on the type of TV being used.

Recording

Turn on the TV and select the VIDEO channel (or AV mode).





INFORMATION

When using the AV connection (☞ pg. 6), you can switch between TV mode and AV mode by pressing **TV/VCR**.

* Depending on the type of TV used, **TV/VCR** button does not function as described above.

Recording Resume Function

If there is a power cut during recording (or Instant Timer Recording or timer recording), the recording will resume automatically when power is restored to the recorder unless the recorder's memory backup has expired.

TV signals being received by the recorder's built-in tuner can be recorded onto a video tape. You can "capture" a TV programme using your video recorder.

1

LOAD A CASSETTE

Insert a cassette with the record safety tab intact (See below).

- The counter is reset to 0:00:00 and the recorder power comes on automatically.

2

CHOOSE A PROGRAMME

Press **PR +/–** or the **NUMBER** keys to select the preset you wish to record.

3

SET TAPE SPEED

Press **SP/LP (///)**. Check the SP/LP indicator on the recorder display panel to confirm the selected tape speed.

- Picture quality of LP recordings will not be as high as on SP recordings.

4

START RECORDING

Press and hold **RECORD** and press **PLAY** on the remote control, or press **RECORD** on the recorder.

B.E.S.T. takes place at the beginning of both the first SP and the first LP recording after inserting the cassette (☞ pg. 28).

If "DIRECT REC" is set to "ON", the programme that appears on the TV screen will be recorded (☞ pg. 11). (Only with a TV offering T-V Link)

- You can not change the preset whilst recording is in progress. To change the preset, see step **5**.

5

PAUSE/RESUME RECORDING

Press **PAUSE**. Press **PLAY** to resume recording.

- During the Record Pause mode, you can change the preset by pressing the **PR +/–** buttons or the **NUMBER** keys.

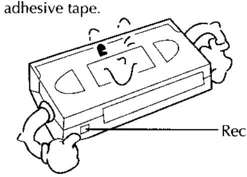
6

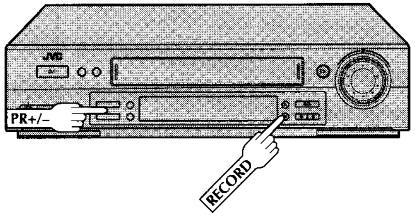
STOP RECORDING

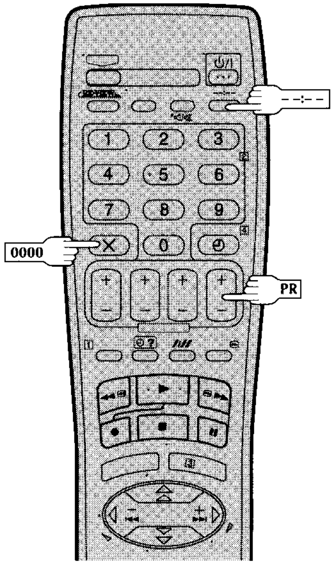
Press **STOP** on the remote control or **STOP/EJECT** on the recorder. Then press **STOP/EJECT** to remove the cassette.

Accidental erasure prevention

- To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.







Tape Remaining Time

1

DISPLAY REMAINING TIME

Press – –:– – until the time remaining on the tape appears.

- The display panel shows the tape remaining time with "▶" displayed.
- By pressing the – –:– – button, you can change the display to show the counter reading, preset position*, clock time or tape remaining time.

* Preset position is not displayed during playback.

NOTE:

Depending on the type of tape used, there may be times when the tape remaining time reading may not appear right away, or is not correct. "– –:– –" may sometimes appear, or the display may blink on occasion.

Record One Programme While Watching Another

1

SELECT PRESET TO WATCH

Once recording is in progress, all you need to do is to set the preset controls on the TV for the station you wish to view.

- The programme selected with the TV's preset controls appears on the TV screen while the one selected with the recorder's **PR** buttons is recorded on the tape.

Elapsed Recording Time Indication

You can check the exact time of a recording.

1

SET COUNTER DISPLAY

Press – –:– – until a counter reading appears on the display panel.

2

RESET COUNTER

Press **0000** before starting recording or playback.

- The counter is reset to "0:00:00" and shows the exact elapsed time as the tape runs.

Instant Timer Recording (ITR)

This easy method allows you to record for any length of time from 30 mins. to 6 hours (selectable in 30-min. increments), and shuts off the recorder after recording is finished.

1

START RECORDING

Press **RECORD** on the recorder.

2

ENGAGE ITR MODE

Press **RECORD** again. "○" blinks and 0:30 appears on the front display panel.

3

SET RECORDING DURATION

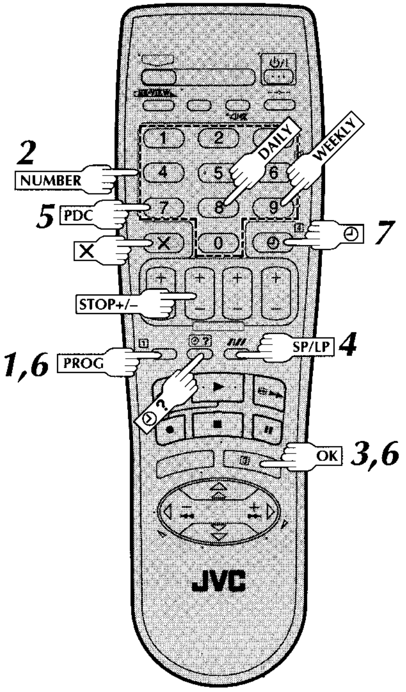
If you want to record for more than 30 minutes, press **RECORD** to extend the time. Each press extends recording time by 30 minutes.

NOTE:

*You can only perform ITR using the **RECORD** button on the recorder's front panel.*

VIDEO Plus+ Timer Programming

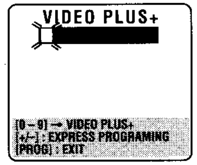
Before performing the VIDEO Plus+ Timer Programming:
- Make sure that the recorder's built-in clock is set properly.
- Insert a cassette with the safety tab in place. The recorder will come on automatically.
- Turn on the TV and select the VIDEO channel (or AV mode).



With the VIDEO Plus+ system, timer programming is greatly simplified because each TV programme has a corresponding code number which your recorder is able to recognise.

1 ACCESS VIDEO PLUS+ SCREEN

Press **PROG**.



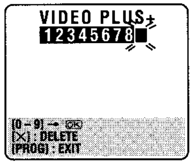
VIDEO PLUS+

[0 – 9] → VIDEO PLUS+
[+/–] : EXPRESS PROGRAMING
[PROG] : EXIT

The front display panel looks like this:

2 ENTER PLUSCODE NUMBER

Press the **NUMBER** keys to enter the PlusCode number of the programme you wish to record.



VIDEO PLUS+
12345678

[0 – 9] → OK
[X] : DELETE
[PROG] : EXIT

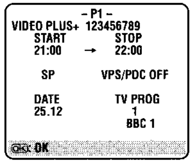
- If you make a mistake, press X and input the correct number.

The PlusCode number you enter appears on the front display panel:

The display panel shows only a 4-digit number.

3 ACCESS VIDEO PLUS+ PROGRAM SCREEN

Press **OK**, and the VIDEO Plus+ Program screen appears (if you're just starting out, "P1" appears).



– P1 –
VIDEO PLUS+ 123456789
START 21:00 → STOP 22:00
SP VPS/PDC OFF
DATE 25.12
TV PROG 1 BBC 1
OK : OK

The display panel shows the programme start time. Pressing ⊕ **?** changes the display to the programme stop time, then the date and preset position.

IMPORTANT
Make sure the preset position number you wish to record is displayed; if not, see "VIDEO Plus+ Setup" on page 45 and set the Guide Program number for that PlusCode number correctly.

- If the number you entered is invalid, "ERROR" appears on the screen and "Err" appears on the display panel. Press X and input a valid PlusCode number.
- If the "GUIDE PROG SET" screen appears, see "ATTENTION – Regarding Guide Program Number Set" on page 19.

4 SET TAPE SPEED

Press **SP/LP (⁄⁄⁄)** to set the tape speed.

5 SET PDC MODE

Press **PDC** to select "ON" or "OFF".
If "VPS/PDC ON" is displayed on the screen or "VPS/PDC" is lit on the display panel, PDC is set to ON.
If "VPS/PDC OFF" is displayed on the screen or "VPS/PDC" is not lit on the display panel, PDC is set to OFF.
☞ "PDC Recording" in the column below.

- VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.

6 RETURN TO NORMAL SCREEN

Press **PROG** or **OK**. "PROGRAM COMPLETED" appears on the screen for about 5 seconds, then normal screen appears. If the timer programme is overlapped with another one that was already set, "PROGRAM OVERLAPPED" appears on screen and "Err" appears on the front display panel. (☞ pg. 23)

- Repeat steps **1** – **6** for each additional programme.

7 ENGAGE RECORDER'S TIMER MODE

Press ⊕ (**TIMER**). The recorder turns off automatically and ⊕ appears on the display panel.

- To disengage the timer, press ⊕ (**TIMER**) again.

NOTES:

- *To Change The Stop Time . . .*
  *. . . press **STOP +/–** after pressing **OK** in step 3. You can compensate for anticipated programme schedule delays this way.*
- *To Timer-Record Weekly Or Daily Serials . . .*
  *. . . after pressing **OK** in step 3, press **WEEKLY** (**NUMBER** key "9") for weekly serials or **DAILY** (**NUMBER** key "8") for daily serials (Monday – Friday). Either "WEEKLY" or "DAILY" appears on the screen. Pressing the button again makes the corresponding indication disappear.*
- *You can programme this recorder to timer-record as many as 8 programmes. If you try to programme the recorder to record a ninth, "PROGRAM FULL" appears on screen and "FULL" appears on the front display panel. To record the extra programme, you must first cancel any unnecessary programmes (☞ pg. 22).*
- *It is not possible to timer-record a TV programme with a PlusCode number which starts with "0".*

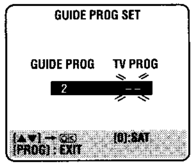
Satellite Receiver Users
To timer-record a satellite broadcast using the VIDEO Plus+ system:
1. Perform "Satellite Receiver Control Setting" (☞ pg. 12).
2. Perform steps **1** – **7**. In step **3**, the display panel shows "L2" for the preset position. In step **5**, you cannot set PDC to ON.
3. Leave the satellite receiver's power on.

ATTENTION

Regarding Guide Program Number Set

"GUIDE PROG SET" appears after performing step **3** if the Guide Program number for the PlusCode number you entered has not been set.

- If you want to set the Guide Program number for the satellite broadcast station, press the **NUMBER** key "0" to change "TV PROG" to "SAT". Press △▽ to input the preset position number on which your recorder or satellite receiver receives that station, then press **OK** or ▷ to set the Guide Program Number. The VIDEO Plus+ Program screen appears.

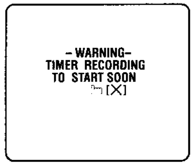


GUIDE PROG SET
GUIDE PROG 2
TV PROG - -
[▲▼] → OK [0]:SAT
[PROG] : EXIT

(Ex.) To timer-record a BBC2 programme with the VIDEO Plus+ system.
* If your recorder receives BBC2 on the preset position 2, press **OK** or ▷ after entering "2" using △▽ buttons.

Timer Warning

If you have programmed your recorder to timer-record a programme or a series of programmes, a warning appears on the screen to tell you that the recording is due to start in 5 minutes.



– WARNING–
TIMER RECORDING
TO START SOON
[X]

NOTES:

- *The warning only appears if you're not in the Timer mode at the time.*
- *If this recorder is being used as the player for tape dubbing, the warning screen will be recorded on the tape in the other video recorder.*

The warning blinks for the entire 5 minutes leading up to the start of timer recording. To clear the display, press X.

PDC Recording

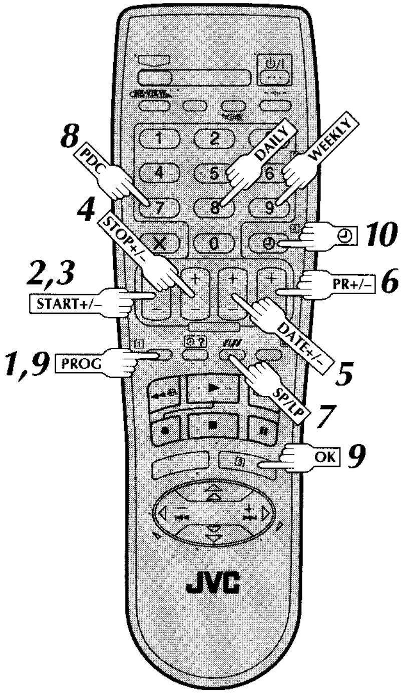
Now available from some TV stations, PDC (Programme Delivery Control) is a service designed to assure safe, accurate timer recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video recorder and have precedence over the advertised times which you may have preset into the timer. This means that your recorder will start and stop recording when the preset TV programme actually start and end — even if the broadcast time of a preset TV programme is changed from what has been advertised. PDC is currently available nationally on BBC1, BBC2, Ch.4 and Ch.5, except from a few small relay transmitters. Ch.3 operates a PDC service in some areas. All channels intend to offer this service in due course. Check your TV programme listing guide for latest information. If the channel you intend to record does not offer a PDC service your recorder will not start recording if PDC has been selected. Be sure to set PDC to "OFF" if PDC is not available on your selected channel (☞ step **5** above).

NOTES:

- *PDC recording is also possible when a satellite receiver or a cable system is connected to AV2 (L-2) IN/DECODER on your recorder.*
- *PDC recording is also possible via the AV1 (L-1) IN/OUT connector.*

Express Timer Programming

Before performing Express Timer Programming:
- Make sure that the recorder's built-in clock is set properly.
- Insert a cassette with the safety tab in place. The recorder will come on automatically.
- Turn on the TV and select the VIDEO channel (or AV mode).



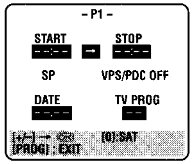
If you don't know the PlusCode number for the programme you wish to record, use the following procedure to set your recorder to timer-record the programme.

1 ACCESS VIDEO PLUS+ SCREEN

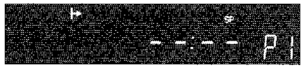
Press **PROG**.

2 ACCESS PROGRAMME SCREEN

Press **START +/–**. (If you're just starting out, "P1" appears.)



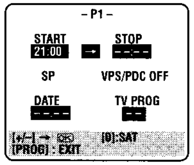
The front display panel looks like this:



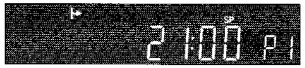
3 ENTER PROGRAMME START TIME

Press **START +/–** to enter the time you want recording to start.

- Press and hold **START +/–** to move in 30-minute increments, or press and release repeatedly to move 1 minute at a time.



The front display panel looks like this:



4 ENTER PROGRAMME STOP TIME

Press **STOP +/–** to enter the time you want recording to stop.

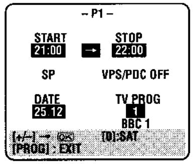
- Press and hold **STOP +/–** to move in 30-minute increments, or press and release repeatedly to move 1 minute at a time.

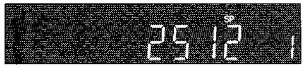
5 ENTER PROGRAMME DATE

Press **DATE +/–** to enter the date on which you wish to record. (The current date first appears on screen. The date you enter will appear in its place.)

6 ENTER PRESET POSITION

Press **PR +/–** to enter the preset position corresponding to the broadcasting station you wish to record.





7 SET TAPE SPEED

Press **SP/LP (▶▶▶)** to set the tape speed.

8 SET PDC MODE

Press **PDC** to select "ON" or "OFF".

If "VPS/PDC ON" is displayed on the screen or "VPS/PDC" is lit on the display panel, PDC is set to ON.
If "VPS/PDC OFF" is displayed on the screen or "VPS/PDC" is not lit on the display panel, PDC is set to OFF.
☞ "PDC Recording" in the right column.

- VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.

9 RETURN TO NORMAL SCREEN

After confirming all information is correct, press **PROG** or **OK**. "PROGRAM COMPLETED" appears on the screen for about 5 seconds, then normal screen appears. If the timer programme is overlapped with another one that was already set, "PROGRAM OVERLAPPED" appears on screen and "Err" appears on the front display panel. (☞ pg. 23)

- Repeat steps **1** – **9** for each additional programme.

10 ENGAGE RECORDER'S TIMER MODE

Press ⊕ (**TIMER**). The recorder turns off automatically and ⊕ appears on the display panel.

- To disengage the timer, press ⊕ (**TIMER**) again.

To Timer-Record Weekly Or Daily Serials . . .
. . . anytime during steps **2** through **9**, press **WEEKLY** (**NUMBER** key "9") for weekly serials or **DAILY** (**NUMBER** key "8") for daily serials (Monday – Friday). Either "WEEKLY" or "DAILY" appears on the screen. Pressing the button again makes the corresponding indication disappear.

NOTE:

You can programme this recorder to timer-record as many as 8 programmes. If you try to programme the recorder to record a ninth, "PROGRAM FULL" appears on screen and "FULL" appears on the front display panel. To record the extra programme, you must first cancel any unnecessary programmes (☞ pg. 22).

Satellite Receiver Users
To timer-record a satellite broadcast using Express Timer Programming:
1. Perform "Satellite Receiver Control Setting" (☞ pg. 12).
2. Perform steps **1** – **10**. In step **6**, press the **NUMBER** key "0" to change "TV PROG" to "SAT". The display panel shows "L2" for the preset position. Then press **PR +/–** to enter the preset position for the satellite broadcast. In step **8**, you cannot set PDC to ON.
3. Leave the satellite receiver's power on.

PDC Recording

Now available from some TV stations, PDC (Programme Delivery Control) is a service designed to assure safe, accurate timer recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video recorder and have precedence over the advertised times which you may have preset into the timer. This means that your recorder will start and stop recording when the preset TV programmes actually start and end — even if the broadcast time of a preset TV programme is changed from what has been advertised. PDC is currently available nationally on BBC1, BBC2, Ch.4 and Ch.5, except from a few small relay transmitters. Ch.3 operates a PDC service in some areas. All channels intend to offer this service in due course. Check your TV programme listing guide for latest information. If the channel you intend to record does not offer a PDC service your recorder will not start recording if PDC has been selected. Be sure to set PDC to "OFF" if PDC is not available on your selected channel.
(☞ step **8** in the left column).

NOTES:

- *Set the start time (PDC time) exactly as advertised in the TV listing. A different time than advertised will result in no recording.*
- *PDC recording is also possible when a satellite receiver or a cable system is connected to AV2 (L-2) IN/DECODER on your recorder.*
- *PDC recording is also possible via the AV1 (L-1) IN/OUT connector.*

Timer Warning

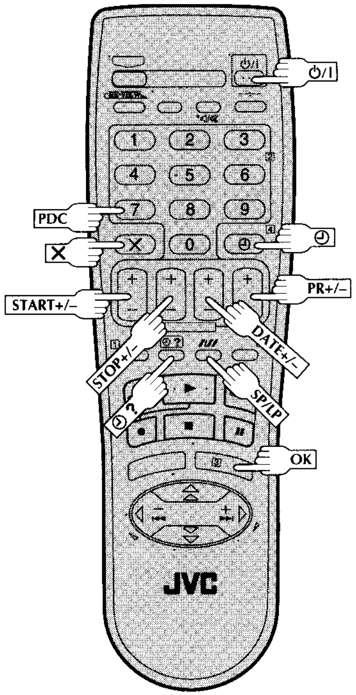
If you have programmed your recorder to timer-record a programme or a series of programmes, a warning appears on the screen to tell you that the recording is due to start in 5 minutes.

– WARNING–
TIMER RECORDING
TO START SOON
[X]

NOTES:

- *The warning only appears if you're not in the Timer mode at the time.*
- *If this recorder is being used as the player for tape dubbing, the warning screen will be recorded on the tape in the other video recorder.*

The warning blinks for the entire 5 minutes leading up to the start of timer recording. To clear the display, press X.



NOTE:

You can also check the programmes on the display panel even if the recorder's power is off (unless the recorder is in the Power Save mode ☞ pg. 41) or the recorder is in the Timer mode; however, it is not possible to cancel or replace the programmes.

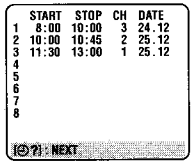
Check, Cancel And Replace Programmes

1 DISENGAGE TIMER MODE

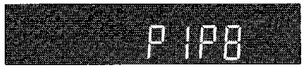
Press ⊕, then press ⏻/I.

2 ACCESS PROGRAMME CHECK SCREEN/DISPLAY

Press ⊕ ?.



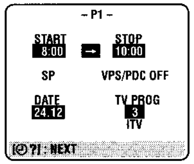
```
  START  STOP  CH  DATE
1  8:00  10:00  3  24.12
2 10:00  10:45  2  25.12
3 11:30  13:00  1  25.12
4
5
6
7
8
[⊕?] : NEXT
```



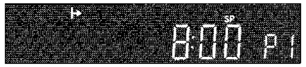
```
P 1P8
```

3 ACCESS PROGRAMME SCREEN/ DISPLAY

Press ⊕ ? again to check more information. Each time you press ⊕ ?, the next programme's information appears.



```
       - P1 -
START        STOP
 8:00   →   10:00
SP     VPS/PDC OFF
DATE       TV PROG
24.12          3
             ITV
[⊕?] : NEXT
```



```
SP
8:00 P1
```

- The display panel shows the programme start time. Pressing **OK** changes the display to the programme stop time, then the date and the preset position.

To cancel or replace a programme...

4 CANCEL OR REPLACE A PROGRAMME

Press X to cancel a programme. To replace a programme, press the appropriate button: **START+/–, STOP+/–, DATE+/–, PR+/–, SP/LP (////), PDC**.

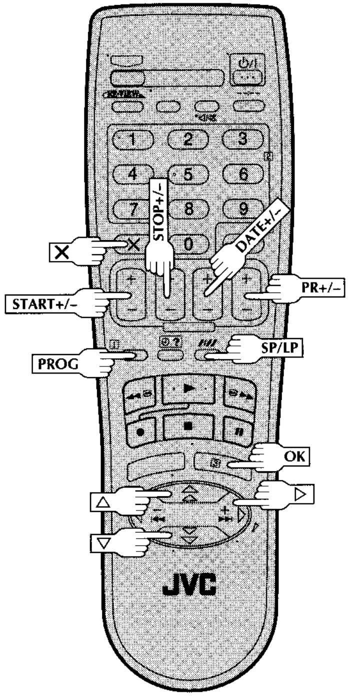
- You can change "TV PROG" to "SAT" for the preset position by pressing the **NUMBER** key "0".

5 RETURN TO NORMAL SCREEN/ DISPLAY

Press ⊕ **?** as many times as necessary. If there are still some programmes to be recorded, go on to step **6**.

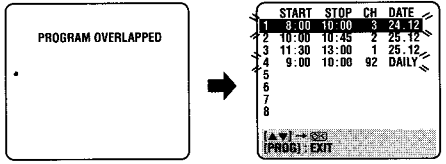
6 RETURN TO TIMER MODE

Press ⊕.



When programmes overlap each other

If "PROGRAM OVERLAPPED" appears, you have another programme overlapping the programme you have just made. The Program Check screen appears and conflicting programmes will start blinking.



```
PROGRAM OVERLAPPED
```

```
  START  STOP  CH  DATE
1  8:00  10:00  3  24.12
2 10:00  10:45  2  25.12
3 11:30  13:00  1  25.12
4  9:00  10:00 92  DAILY
5
6
7
8
[▲▼] → OK
[PROG] : EXIT
```

EX. Programme 1 (you have just made) and Programme 4 overlap each other.

1 CONFIRM OVERLAPPING PROGRAMMES

Overlapping programmes blink on the screen.

2 SELECT PROGRAMME TO MODIFY

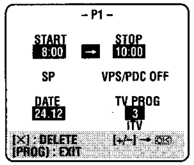
Press △▽, then press **OK** or ▷.

- You can only select one of the overlapping programmes.

NOTE:

*If you do not mind this overlap, press **PROG** to finish the timer programme setting. The programme with the lower programme number will be recorded and the other one will not be recorded correctly. Without doing anything for about 1 minutes, the recorder will finish the timer programming.*

3 CANCEL OR CHANGE PROGRAMME SETTING



```
       - P1 -
START        STOP
 8:00   →   10:00
SP     VPS/PDC OFF
DATE       TV PROG
24.12          3
             ITV
[X] : DELETE   [+/–] → OK
[PROG] : EXIT
```

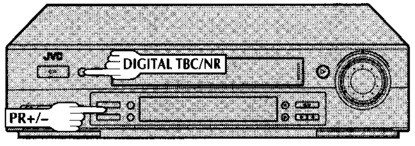
To cancel a programme, press X when the Program screen you do not want is shown. "PROGRAM COMPLETED" appears on the screen for about 5 seconds, then normal screen appears.

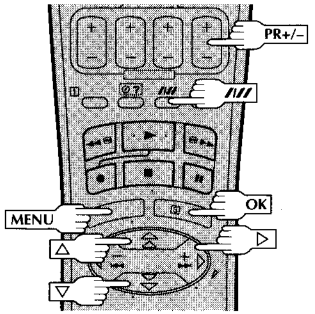
To change a programme, press the appropriate button: **START+/–, STOP+/–, DATE +/–, PR +/–, SP/LP** (**////**) and/or **PDC** when the Program screen on which you want to make changes is shown, then press **OK**. "PROGRAM COMPLETED" appears on the screen for about 5 seconds, then normal screen appears.

NOTE:

If the overlap is not yet solved or another overlap occurs with the timer programme setting made last after making correction on a programme, the conflicting programmes will be shown on the Program Check screen again. Repeat the above steps again until the overlap is solved.

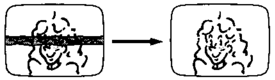
Playback Picture Adjustment





Manual Tracking

Your video recorder is equipped with automatic tracking control. For most tapes this will automatically adjust the tracking to suit the particular tape you are playing. In some circumstances it may be necessary to make manual tracking adjustments. This is usually only associated with old or worn tapes or recordings made on old or worn recorders. If the automatic tracking control fails to operate correctly you will see noise bars across the picture as shown on the left below. To correct this you can override the automatic control and adjust the tracking manually by pressing the **PR** buttons.



1 OVERRIDE AUTOMATIC TRACKING

Press **///** on the remote to engage manual tracking.

2 ADJUST TRACKING MANUALLY

Press **PR** + or – to adjust tracking.

3 RETURN TO AUTOMATIC TRACKING

Press **///** on the remote to re-engage automatic tracking.

NOTE:

When a new tape is inserted, the recorder returns to the automatic tracking mode automatically.

Digital TBC/NR

Your video recorder is equipped with a Digital TBC (Time Base Corrector) that removes jitter from fluctuating video signals to deliver a stable picture even with old tapes and rental cassettes. The on/off of Digital 3-DNR (Noise Reduction) which cuts noise and enables clear picture reproduction is also linked to this function.

* The default setting is "ON".

We recommend that you use the Digital TBC feature when...

... playing back a tape recorded on a camcorder.

... playing back a tape repeatedly used.

... using this video recorder as the player for editing.

1 ACTIVATE DIGITAL TBC/NR

Press **DIGITAL TBC/NR** so that the button lights up.

- To turn off DIGITAL TBC/NR, press **DIGITAL TBC/NR** again so that the light goes off.

NOTES:

- *If you play back a tape recorded under poor TV reception condition, there may be cases where the picture becomes more stable with Digital TBC/NR set to off.*
- *When Digital TBC/NR is set to on, if you play back a tape where certain types of signals are recorded (using a PC or some character generators), the playback picture may be distorted. If this is the case, turn off Digital TBC/NR.*

Digital 3R

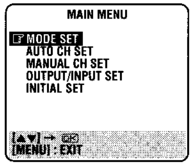
Digital 3R picture system applies edge correction to the luminance signal to enhance detail.

1 ACCESS MAIN MENU SCREEN

Press **MENU**.

2 ACCESS MODE SET SCREEN

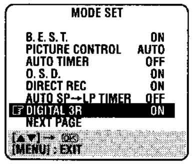
Move the highlight bar (arrow) to "MODE SET" by pressing △▽, then press **OK** or ▷.



```
MAIN MENU

☞MODE SET
  AUTO CH SET
  MANUAL CH SET
  OUTPUT/INPUT SET
  INITIAL SET

[▲▼] → OK
[MENU] : EXIT
```

3 SELECT DIGITAL 3R SET MODE

Move the highlight bar (arrow) to "DIGITAL 3R" by pressing △▽, then press **OK** or ▷ to set to "ON".



```
MODE SET

  B. E. S. T.               ON
  PICTURE CONTROL         AUTO
  AUTO TIMER               OFF
  O. S. D.                  ON
  DIRECT REC                ON
  AUTO SP→LP TIMER         OFF
☞DIGITAL 3R                 ON
  NEXT PAGE
[▲▼] → OK
[MENU] : EXIT
```

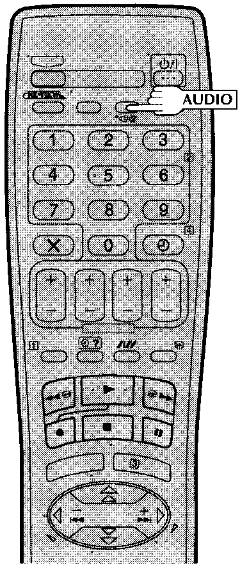
4 RETURN TO NORMAL SCREEN

Press **MENU**.

NOTES:

- *Normally it is recommendable to keep "DIGITAL 3R" set to "ON".*
- *Depending on the type of tape being used, picture quality may sometimes be better with "DIGITAL 3R" set to "OFF".*
- *If you use the recorder as the source player for editing, be sure to set "DIGITAL 3R" to "OFF" before starting.*

Selecting The Sound You Want



Receiving NICAM Stereo And Bilingual Programmes

Your recorder is equipped with a Digital stereo sound decoder (NICAM), making reception of stereo and bilingual broadcasts possible.

When the recorder is tuned to a different station, the type of broadcast being received will be displayed on the TV screen for a few seconds.

Type of Broadcast Being Received	On-screen Display
Regular Monaural	(none)
NICAM Stereo	ST NICAM
NICAM Bilingual	BIL. NICAM
NICAM Monaural	NICAM

- To listen to a stereo programme, press **AUDIO** until "▷" and "◁" appear on the front display panel or "HI FI L ▷ ◁ R" appears on the screen.
- To listen to a bilingual programme, press **AUDIO** until either "▷" or "◁" appears on the front display panel or "HI FI L ▷" or "HI FI ◁ R" appears on the screen (as required).
- To listen to the Standard (regular monaural) audio while receiving a NICAM broadcast, press **AUDIO** until "NORM" appears on the front display panel or on the screen.

NOTES:

- *The NICAM audio programme will be recorded on the Hi-Fi audio track, and the Standard audio programme on the normal audio track.*
- *If the quality of stereo sound being received is poor, the broadcast will be received in monaural with better quality.*
- *Before playing back a programme recorded in stereo, or a bilingual programme, refer to "Soundtrack Selection" (See below).*
- *"O.S.D." must be set to "ON" or the on-screen displays will not appear (☞ pg. 40).*

Soundtrack Selection

Your video recorder is capable of recording three soundtracks (HI-FI L, HI-FI R and NORM) and will play back the one you select.

During Playback

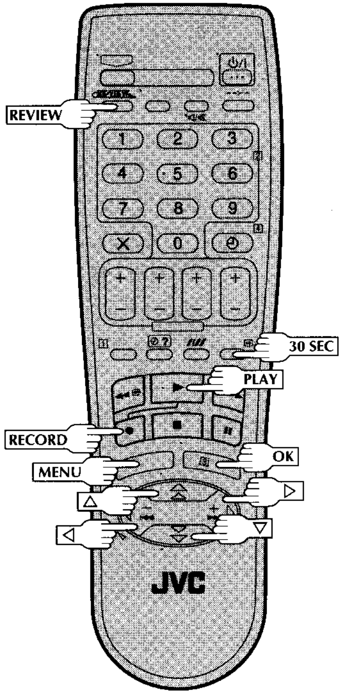
Pressing **AUDIO** on the remote control changes the soundtrack being played back as follows:

TRACK		USE
Recorder's Front Panel	On-Screen Display	
▷ + ◁	HI FI L ▷ ◁ R	For Hi-Fi stereo tapes
▷	HI FI L ▷	For main audio of Bilingual tapes
◁	HI FI ◁ R	For sub audio of Bilingual tapes
NORM	NORM	For audio-dubbed tapes
▷ + ◁ + NORM	HI FI NORM	For audio-dubbed tapes

NOTES:

- *"▷ + ◁" should normally be selected. In this mode, Hi-Fi stereo tapes are played back in stereo, and the normal audio track is played back automatically for tapes with only normal audio.*
- *For instructions on recording NICAM stereo and bilingual programmes, see above.*
- *Bilingual programmes are not currently broadcast in the U.K.*
- *"O.S.D." must be set to "ON" or the on-screen displays will not appear (☞ pg. 40).*

Looking For The Scene You Want



Skip Search

1 SKIP OVER UNWANTED SECTIONS

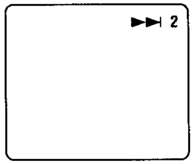
Press **30 SEC** 1 to 4 times during playback. Each press initiates a 30-second period of fast-motion playback. Normal playback resumes automatically.

NOTE:

*To return to normal playback during a Skip Search, press **PLAY**.*

Index Search

Your recorder automatically marks index codes at the beginning of each recording. This function gives you quick access to any one of 9 index codes in either direction.



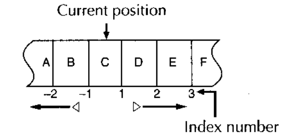
NOTE:

Before starting, make sure the recorder is in the Stop mode.

1 ACTIVATE INDEX SEARCH

Press ◁ or ▷ (I◄◄ or ►►I). "I◄◄ 1" or "►►I 1" is displayed on screen and search begins in the corresponding direction.

- To access index codes 2 through 9, press ◁ or ▷ repeatedly until the correct index number is displayed.
  Ex.: To locate the beginning of B from the current position, press ◁ twice.
  To locate the beginning of D from the current position, press ▷ once.



- When the specified index code is located, playback begins automatically.

Instant ReView

Simply by pressing a single button, the recorder power comes on, rewinds, and begins playback of the last timer-recorded programme. If you have several programmes recorded, you can easily access any of them.

NOTE:

Before starting, make sure that the recorder is off and that the Timer mode is disengaged.

1 ACTIVATE INSTANT REVIEW

Press **REVIEW**. The recorder power comes on and the recorder searches for the index code indicating the start of the last timer-recorded programme. Once it's found, playback begins automatically.

- The front display panel tells you how many programmes have been timer-recorded. If you have, for example, 3 programmes, "REVIEW" and "3" appear and blink. To watch the first of the 3 programmes, press **REVIEW** three times. The recorder searches and begins playback automatically. You can access a programme as far as 9 index codes away from the current tape position.

NOTES:

- *Instant ReView is not possible while the recorder is in the Timer mode.*
- *The number of recorded programmes will not be displayed on the front display panel after Auto Satellite Prog recording (☞ pg. 30).*

Recording According To Tape Type

Turn on the TV and select the VIDEO channel (or AV mode).

Super VHS ET (S-VHS ET) — Recording on VHS tapes with S-VHS quality

This function allows you to record in SP mode on VHS tapes with S-VHS picture quality. Tapes recorded using this function can be played back on a recorder equipped with the S-VHS ET function.

- You can activate this function only before you start recording on a VHS tape.
- Before recording, make sure that "B.E.S.T." is set to "ON". (☞ pg. 28)

1 ENGAGE S-VHS ET MODE

Press **S-VHS ET** on the recorder's front panel. The S-VHS ET button lights up.

- The S-VHS indicator lights up on the front display panel.
- To disengage the S-VHS ET mode, press **S-VHS ET**. The button's light goes off.

2 START RECORDING

Press and hold **RECORD** and press **PLAY** on the remote control, or press **RECORD** on the recorder.

NOTES:

- *Use of high grade tapes is essential for S-VHS ET recordings. On some tapes, picture quality will not improve even if the S-VHS ET function is used. Check the recording quality before you start important recordings.*
- *You cannot activate the S-VHS ET function ...*
  ... while recording is in progress.
  ... while timer-recording or Instant Timer Recording (☞ pg. 17) is in progress.
  ... while B.E.S.T. (☞ pg. 28) is in progress.
- *S-VHS ET does not work ...*
  ... with S-VHS tapes.
  ... with recordings in LP mode.
- *To keep the highest quality recording and playback pictures over a long period of time, S-VHS recording on S-VHS tapes is recommended.*
- *You can play back S-VHS ET recordings on most S-VHS recorders and on VHS recorders equipped with SQPB (S-VHS QUASI PLAYBACK) function. (Notice: some recorders are not compatible with this function.)*
- *On some tapes noise may appear when playing back a tape recorded with this function. (If playback picture becomes blurred or interrupted, use a cleaning cassette.)*
- *In the high-speed search, still, slow-motion or frame-by-frame playback modes (☞ pg. 15), noise may appear. If these modes are used frequently on a tape recorded with the S-VHS ET function, the tape may be damaged and the picture may be deteriorated.*

Super VHS (S-VHS), S-VHS ET and VHS

Your recorder can record in S-VHS, S-VHS ET or VHS.

To record in S-VHS:
Perform the steps **1** – **4** below to set "S-VHS" to "ON".
Then, insert a cassette marked "S-VHS", the S-VHS indicator will light on the display panel.
The S-VHS recording mode will be selected.

To record in S-VHS ET on a VHS cassette:
See "Super VHS ET (S-VHS ET)" in the left column.

To record in VHS:
Insert a cassette marked "VHS".
If the S-VHS ET button on the recorder is lit and the S-VHS ET mode is activated, press **S-VHS ET**. The button's light goes off. The VHS recording mode will be automatically selected regardless of the S-VHS mode setting.

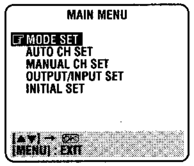
To record in VHS on an S-VHS cassette:
Insert the cassette marked "S-VHS", the S-VHS indicator will light on the display panel.
Then, perform the steps **1** – **4** below to set the "S-VHS" to "OFF"; the S-VHS indicator will go out.
The VHS recording mode will be selected.

1 ACCESS MAIN MENU SCREEN

Press **MENU**.

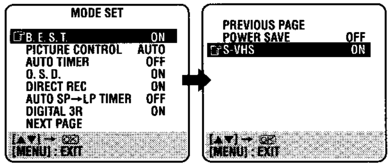
2 ACCESS MODE SET SCREEN

Move the highlight bar (pointer) to "MODE SET" by pressing △▽, then press **OK** or ▷.



3 SELECT S-VHS MODE

Move the highlight (pointer) to "S-VHS" by pressing △▽, then press **OK** or ▷ to select "ON" or "OFF".



4 RETURN TO NORMAL SCREEN

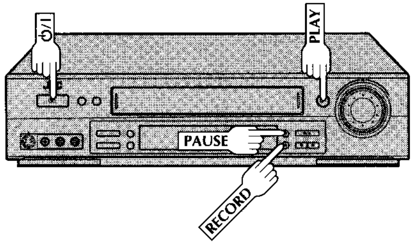
Press **MENU**.

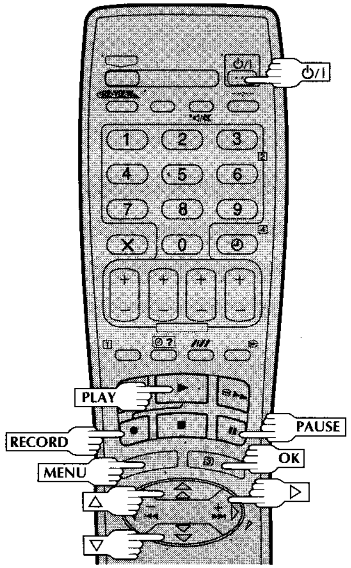
NOTE:

When playing back a tape that has been recorded in S-VHS or S-VHS ET, the S-VHS indicator lights on the display panel regardless of the "S-VHS" mode setting.

Playback/ Recording According To Tape Characteristics

Turn on the TV and select the VIDEO channel (or AV mode).





B.E.S.T. Picture System

The B.E.S.T. (Biconditional Equalised Signal Tracking) system checks the condition of the tape in use during recording and playback, and compensates to provide the highest-possible recording and playback pictures. The default setting for both recording and playback is "ON".

1 TURN ON THE RECORDER

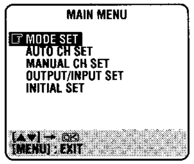
Press ⏻/I.

2 ACCESS MAIN MENU SCREEN

Press **MENU**.

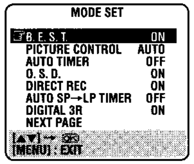
3 ACCESS MODE SET SCREEN

Press △▽ to move the highlight bar (pointer) to "MODE SET", then press **OK** or ▷.


MAIN MENU
☞ MODE SET
AUTO CH SET
MANUAL CH SET
OUTPUT/INPUT SET
INITIAL SET
[▲▼] → ⓞⓚ
[MENU] : EXIT

4 SELECT B.E.S.T. MODE

Press △▽ to move the highlight bar (pointer) to "B.E.S.T.", then press **OK** or ▷ to set to "ON" or "OFF".


MODE SET

☞ B.E.S.T.	ON
PICTURE CONTROL	AUTO
AUTO TIMER	OFF
O.S.D.	ON
DIRECT REC	ON
AUTO SP→LP TIMER	OFF
DIGITAL 3R	ON
NEXT PAGE	

[▲▼] → ⓞⓚ
[MENU] : EXIT

5 RETURN TO NORMAL SCREEN

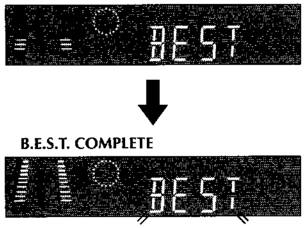
Press **MENU**.

Recording

1 START RECORDING

Press and hold **RECORD** and press **PLAY** on the remote, or press **RECORD** on the recorder.

DURING B.E.S.T.



- The recorder spends approximately 7 seconds assessing the condition of the tape, then begins recording.

NOTES:

- *The B.E.S.T. system works for both SP and LP modes only after a tape has been inserted and the Record mode is first initiated. It does not work during recording.*
- *The B.E.S.T. system does not work while Auto Satellite Prog recording is in progress (☞ pg. 30).*
- *In the case of timer recording, the B.E.S.T. system works before recording is initiated.*
- *Once the cassette is ejected, the B.E.S.T. data is cancelled. The next time the cassette is used for recording, B.E.S.T. is re-performed.*
- *Pressing the recorder's **RECORD** button while "BEST" is displayed does not start Instant Timer Recording (☞ pg. 17).*

ATTENTION

*Since the B.E.S.T. system works before recording actually starts, there is a delay of approximately 7 seconds after **RECORD** and **PLAY** on the remote are pressed, or **RECORD** on the recorder is pressed. To make sure you record the desired scene or programme in its entirety, first perform the following steps:*

*1) Press and hold **PAUSE** and press **RECORD** to engage the RECORD PAUSE mode.*
   - *The recorder then automatically checks the condition of the tape and, after approximately 7 seconds, re-enters RECORD PAUSE.*

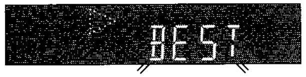
*2) Press **PLAY** when you are ready to start recording.*
   - *If you want to bypass the B.E.S.T. system and begin recording immediately, set "B.E.S.T." to "OFF" in step 4 on page 28.*

Playback

The recorder assesses the quality of the tape once you initiate playback.

1 START PLAYBACK

Press **PLAY**.



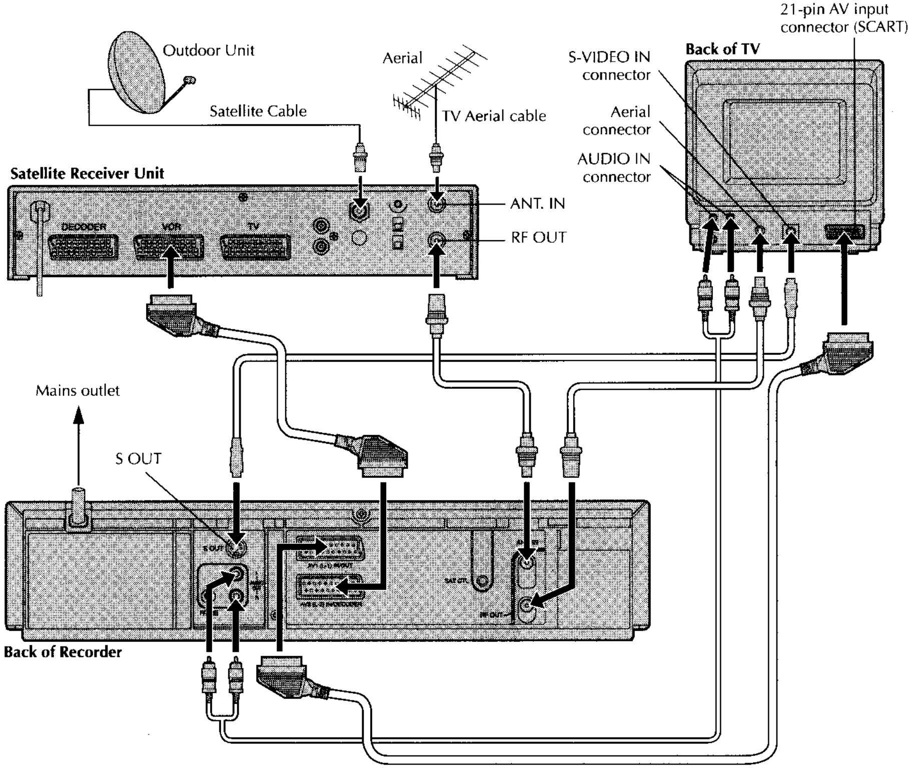
- The recorder adjusts the playback picture quality based on the quality of the tape in use.
- B.E.S.T. is active during Auto Tracking. "BEST" appears blinking on the recorder's display panel.

NOTES:

- *When watching a tape recorded with "B.E.S.T." set to "ON", it is recommended that you leave B.E.S.T. on during playback as well.*
- *When watching a rental tape or one recorded on another video recorder, or when using this recorder as the player for editing, set B.E.S.T. to your preference by performing steps **1** through **5** on page 28.*
- *"BEST" only appears at the beginning of automatic tracking. Even though it doesn't appear after that, the B.E.S.T. function is operative.*

Automatic Satellite Programme Recording

This facility allows you to record automatically a satellite programme which is timer-programmed on your external satellite receiver. Connect a satellite receiver to the recorder's AV2 (L-2) IN/DECODER connector and programme the timer on the satellite receiver; the recorder starts recording when the signals input from the satellite receiver to the AV2 (L-2) IN/DECODER connector, and when there is no input signals the recorder stops recording and the power shuts off.



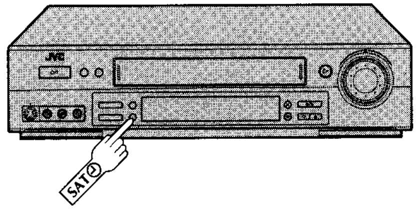
IMPORTANT

When you set "L-2 SELECT" to "SAT" (☞ pg. 36), it is possible to view a satellite broadcast with the TV set to its AV mode even if the recorder is turned off. When the recorder is in Stop mode or recording, press **TV/VCR** on the remote control to turn off the VCR indicator on the display panel.

- If you turn on the recorder when the satellite receiver's power is off, nothing appears on the TV screen. In this case, turn on the satellite receiver, or set the TV to its TV mode, or press **TV/VCR** on the remote control to set the recorder to the video mode.

NOTE:

Refer to the instructions supplied with your satellite receiver.



ATTENTION

- Be sure not to turn on the satellite receiver before the programme is executed; otherwise, the recorder will start recording when the satellite receiver's power is turned on.
- If you have connected another appliance other than a satellite receiver to the AV2 (L-2) IN/DECODER connector, be sure not to engage the Auto Satellite Prog Rec mode; otherwise, the recorder will start recording when the connected appliance's power is turned on.
- Auto Satellite Prog recording and timer-recording cannot be done at the same time.
- When you press and hold the recorder's **SAT⊙** button to engage the Auto Satellite Prog Rec mode, if the SAT⊙ button does not light but instead blinks quickly even though your satellite receiver's power is off, Auto Satellite Prog Recording will not work properly with that satellite receiver*.

  If this is the case, perform "Express Timer Programming" (☞ pg. 20) to timer-record a satellite programme.

  **Some satellite receivers output signals even if the power is off. Auto Satellite Prog Recording is not possible with those satellite receivers.*

Before performing the following steps:

- Make sure the satellite receiver is connected to the recorder's AV2 (L-2) IN/DECODER connector. (☞ pg. 30)
- Programme the timer on the satellite receiver.
- Insert a cassette with the safety tab in place.

1 ACCESS MAIN MENU SCREEN

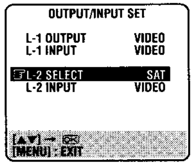
Press **MENU**.

2 ACCESS OUTPUT/INPUT SET SCREEN

Move the highlight bar (pointer) to "OUTPUT/INPUT SET" by pressing △▽, then press **OK** or ▷.

3 SELECT L-2 SELECT MODE

Move the highlight bar (pointer) to "L-2 SELECT", by pressing △▽, then press **OK** or ▷ to set to "SAT" or "A/V". Then press **MENU**.


OUTPUT/INPUT SET

L-1 OUTPUT VIDEO
L-1 INPUT VIDEO

☞L-2 SELECT SAT
L-2 INPUT VIDEO

4 SET TAPE SPEED

Press **SP/LP** (**////**) to set the tape speed.

5 ENGAGE AUTO SATELLITE PROG REC MODE

Press and hold **SAT⊙** for about 2 seconds. The button lights up and the recorder turns off automatically.

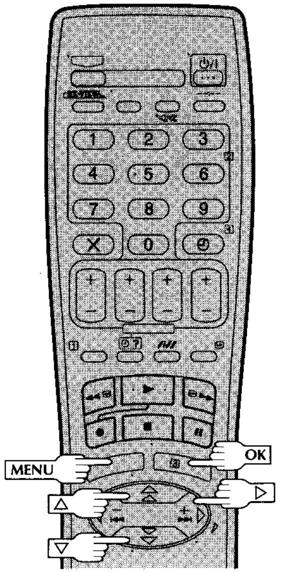
- To disengage the Auto Satellite Prog Rec mode, press **SAT⊙**. The light goes off.
- If the recorder's power is off, it is not possible to engage the Auto Satellite Prog Rec mode.

NOTES:

- *Auto Satellite Prog recording is possible with the AV2 (L-2) IN/DECODER connector only.*
- *When the Auto Satellite Prog Rec mode is engaged or the recorder's power is turned off after Auto Satellite Prog recording is finished, the recorder will not enter the Timer mode even though "AUTO TIMER" is set to "ON".*
- *After Auto Satellite Prog recording, the number of recorded programmes will not be displayed on the front display panel for the Instant ReView function (☞ pg. 26).*
- *For timer programming of the satellite receiver, refer to the instruction manual of the satellite receiver.*
- *Auto Satellite Prog recording is not possible if your satellite receiver does not have a timer.*
- *The SAT ⊙ button blinks while Auto Satellite Prog recording is in progress.*
- *Pressing the recorder's ⏻/I button while Auto Satellite Prog recording is in progress turns off the recorder's power and disengages the Auto Satellite Prog Rec mode.*
- *If there is more than one satellite programme you wish to record with Auto Satellite Prog Recording, it is not possible to set a different tape speed for each; the tape speed selected in step **4** will apply to all the programmes for Auto Satellite Prog recording.*
- *The B.E.S.T. system (☞ pg. 28) does not work while Auto Satellite Prog recording is in progress.*
- *Just Clock (☞ pg. 55) does not work when the Auto Satellite Prog Rec mode is engaged.*
- *Depending on the type of satellite receiver, the recorder may not record a short portion at the beginning of the programme or may record slightly longer than the actual length of the programme.*
- *If you engage the Auto Satellite Prog Rec mode when the satellite receiver's power is on, the recorder will not start Auto Satellite Prog recording even though the SAT ⊙ button blinks. When the satellite receiver shuts off once and is turned back on again, the recorder starts recording.*
- *You can also record a programme from your cable system in the same way if the system has a timer and is connected to the recorder's AV2 (L-2) IN/DECODER connector.*

Minimizing Picture Degradation While Editing

Turn on the TV and select the VIDEO channel (or AV mode).



Advantages Of S-VHS Video Recorders

You can edit from VHS to S-VHS, S-VHS to VHS, or, from S-VHS to S-VHS.

- From VHS to S-VHS: Record VHS playback signals in the S-VHS mode. Although the picture quality is inherently limited by that of the original, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to VHS: Because the picture quality of the source material is very high, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to S-VHS: All signals will be transferred with minimum degradation.

Picture Control

This feature helps you to adjust the playback picture quality according to your preference. *The default setting is "AUTO."

1 ACCESS MAIN MENU SCREEN

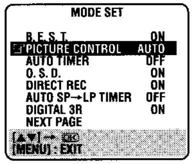
Press **MENU**.

2 ACCESS MODE SET SCREEN

Move the highlighted bar (pointer) to "MODE SET" by pressing △▽, then press **OK** or ▷.

3 SELECT PICTURE CONTROL SET MODE

Move the highlighted bar (pointer) to "PICTURE CONTROL" by pressing △▽, then press **OK** or ▷ to select the desired mode.



```
MODE SET

B.E.S.T.                ON
PICTURE CONTROL       AUTO
AUTO TIMER             OFF
O. S. D.                ON
DIRECT REC              ON
AUTO SP→LP TIMER       OFF
DIGITAL 3R              ON
NEXT PAGE
[▲▼] → OK
[MENU] : EXIT
```

AUTO: Provides optimised picture benefits of B.E.S.T. Picture System. Normally select "AUTO".

EDIT: Minimizes picture degradation during editing (recording and playback).

SOFT: Reduces image coarseness when viewing overplayed tapes containing a lot of noise.

SHARP: Clearer, sharper-edged picture when viewing images with lots of flat, same-coloured surfaces such as cartoons.

NOTES:

- *When you select "EDIT", "SOFT" or "SHARP", the selected mode will not change until you select again.*
- *When you select "EDIT" to dub tapes, be sure to select "AUTO" after you finish dubbing the tapes.*

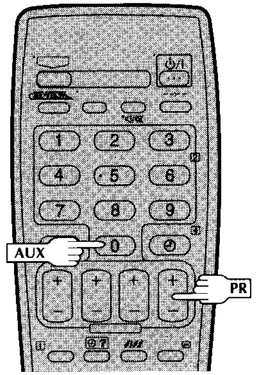
4 RETURN TO NORMAL SCREEN

Press **MENU**.

NOTES:

- *When "B.E.S.T." is "OFF", "PICTURE CONTROL" switches automatically from "AUTO" to "NORM".*
- *Select "EDIT" when you are dubbing tapes. Refer to page 33 or 34.*

Edit From A Camcorder



NOTES:

- *All necessary cables can be obtained from your dealer.*
- *You can also use another video recorder as the player instead of a camcorder.*
- *When you select "EDIT" to dub tapes in step **3**, be sure to select "AUTO" (or "NORM" when "B.E.S.T." is set to "OFF") after you finish dubbing the tapes.*

You can use a camcorder as the source player and your video recorder as the recorder.

1 MAKE CONNECTIONS

Ⓐ *If the camcorder has no S-VIDEO output connector...*
... connect the camcorder's AUDIO/VIDEO OUT connectors to the recorder's front panel AUDIO/VIDEO input connectors.

Ⓑ *If the camcorder has an S-VIDEO output connector...*
... connect the camcorder's S-VIDEO OUT and AUDIO OUT connectors to the recorder's front panel S-VIDEO and AUDIO input connectors.

- When using a monaural camcorder, connect its AUDIO OUT connector to the AUDIO L input connector on your recorder.
- When a Master Edit Control-equipped JVC camcorder is used, the camcorder is capable of controlling the recorder. Refer to the camcorder's instruction manual for operating procedure.

2 SET RECORDER'S INPUT MODE

Press **AUX** and/or **PR** to select "F-1" for the AUDIO/VIDEO input connectors, or "S-1" for the AUDIO/S-VIDEO input connectors, depending on the connectors being used.

3 SET EDIT MODE

See "Picture Control" on page 32.

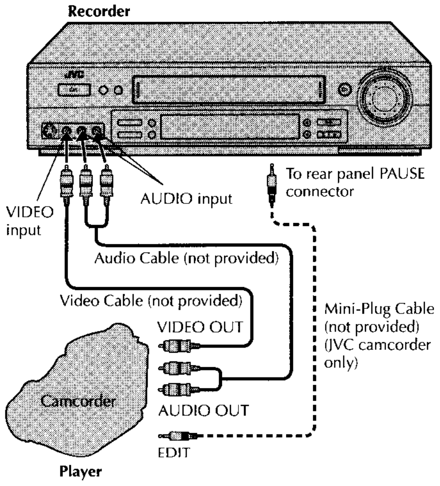
4 START CAMCORDER

Engage its Play mode.

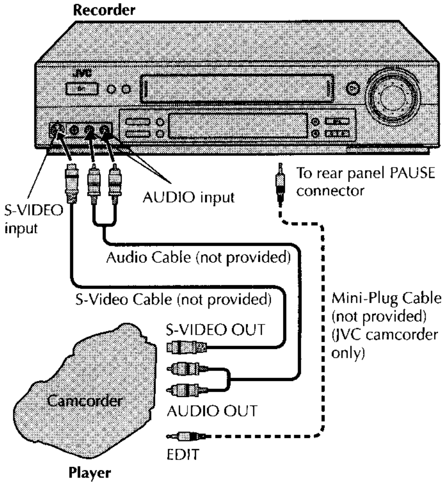
5 START RECORDER

Engage its Record mode.

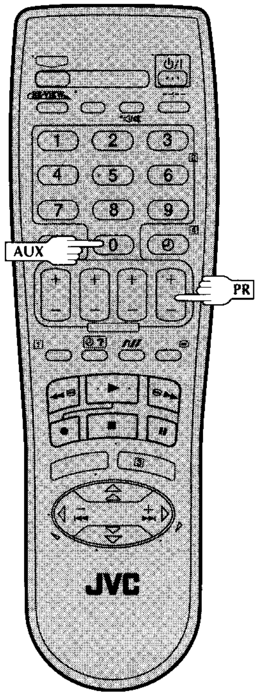
Ⓐ If the camcorder has no S-VIDEO output connector...


Recorder
VIDEO input
AUDIO input
To rear panel PAUSE connector
Audio Cable (not provided)
Video Cable (not provided)
VIDEO OUT
Mini-Plug Cable (not provided) (JVC camcorder only)
Camcorder
AUDIO OUT
EDIT
Player

Ⓑ If the camcorder has an S-VIDEO output connector...


Recorder
S-VIDEO input
AUDIO input
To rear panel PAUSE connector
Audio Cable (not provided)
S-Video Cable (not provided)
S-VIDEO OUT
Mini-Plug Cable (not provided) (JVC camcorder only)
Camcorder
AUDIO OUT
EDIT
Player

Edit To Or From Another Video Recorder



You can use your video recorder as the source player or as the recording deck.

1 MAKE CONNECTIONS

Connect the player's 21-pin SCART connector to the recorder's 21-pin SCART connector as illustrated on page 35.

A *When Using Your Video Recorder As The Source Player ...*
... connect its AV1 (L-1) IN/OUT connector to the recording deck.

B *When Using Your Video Recorder As The Recording Deck ...*
... connect its AV2 (L-2) IN/DECODER or AV1 (L-1) IN/OUT connector to the source player.

C *If Another Recorder Is Compatible With The Y/C Signal ...*
... connect your recorder's AV1 (L-1) IN/OUT connector to another recorder.

With C connection ...
- When using your recorder as the recording deck, set "L-1 INPUT" to "S-VIDEO" and "L-2 SELECT" to "A/V" (☞ pg. 36).
- When using your recorder as the source player, set "L-1 OUTPUT" to "S-VIDEO" (☞ pg. 36).

2 SET RECORDING DECK'S INPUT MODE

Set to AUX. With this video recorder, press **AUX** and/or **PR** to select "L-1" for the AV1 (L-1) IN/OUT connector, or "L-2" for the AV2 (L-2) IN/DECODER connector, depending on the connector being used.

- When using the AV2 (L-2) IN/DECODER connector, set "L-2 SELECT" to the appropriate mode. (☞ pg. 36)

3 SET EDIT MODE

See "Picture Control" on page 32.

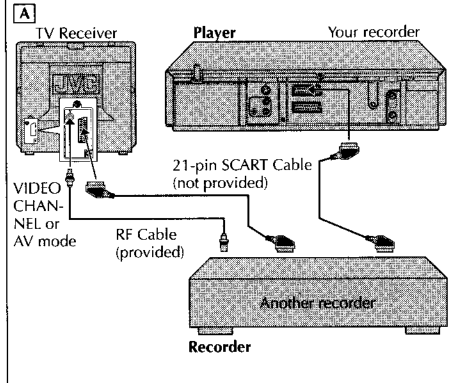
4 START SOURCE PLAYER

Engage its Play mode.

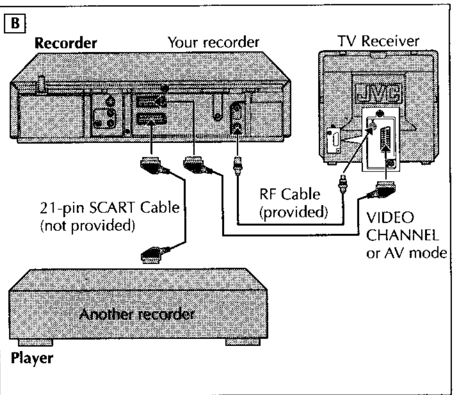
5 START RECORDING DECK

Engage its Record mode.

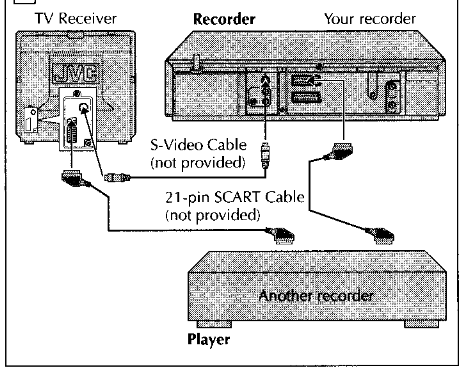
A


TV Receiver
Player
Your recorder
21-pin SCART Cable
(not provided)
VIDEO CHAN-NEL or AV mode
RF Cable
(provided)
Another recorder
Recorder

B


Recorder
Your recorder
TV Receiver
21-pin SCART Cable
(not provided)
RF Cable
(provided)
VIDEO CHANNEL or AV mode
Another recorder
Player

C

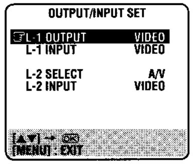

TV Receiver
Recorder
Your recorder
S-Video Cable
(not provided)
21-pin SCART Cable
(not provided)
Another recorder
Player

NOTES:

- *All necessary cables can be obtained from your dealer.*
- *For Y/C signal input/output, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.*
- *When you select "EDIT" to dub tapes in step **3**, be sure to select "AUTO" (or "NORM" when "B.E.S.T." is set to "OFF") after you finish dubbing the tapes.*
- *When you use this recorder as the player for editing, be sure to set "O.S.D." to "OFF" before starting (☞ pg. 40).*
- *If you are using another recorder with S-Video and Audio input/output connectors, you can connect those connectors to this recorder's S-VIDEO IN/S OUT and AUDIO IN/OUT connectors.*
  When Using Your Video Recorder As The Source Player ...
  ... connect its rear panel S OUT and AUDIO OUT connectors to the recording deck's S-Video and Audio input connectors.
  When Using Your Video Recorder As The Recording Deck ...
  ... connect its front panel S-VIDEO and AUDIO input connectors to the source player's S-Video and Audio output connectors.
  Then, set the recorder's input mode to "S-1".

L-1 OUTPUT/INPUT Setting

The AV1 (L-1) IN/OUT connector accepts and delivers either a composite signal (regular video signal) or a Y/C signal (a signal in which the luminance and chrominance signals are separated). Set "L-1 OUTPUT" and "L-1 INPUT" to the appropriate mode depending on the type of unit connected to the rear panel AV1 (L-1) IN/OUT connector of this recorder.



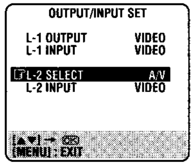
OUTPUT/INPUT SET
L-1 OUTPUT VIDEO
L-1 INPUT VIDEO
L-2 SELECT A/V
L-2 INPUT VIDEO
[▲▼] → OK
[MENU] : EXIT

1 Press **MENU** to access the Main Menu screen.
2 Press △▽ to move the highlight bar (pointer) to "OUTPUT/INPUT SET", then press **OK** or ▷.
3 Press △▽ to move the highlight bar (pointer) to "L-1 OUTPUT" or "L-1 INPUT".
4 **For "L-1 OUTPUT"**
Press **OK** or ▷ to select "VIDEO" or "S-VIDEO".
a–VIDEO : If a connected device's input is compatible only with regular video signals, set to "VIDEO".
b–S-VIDEO : If a connected device's input is compatible with Y/C signals, set to "S-VIDEO". This setting will let you take advantage of higher-quality S-VHS pictures. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)
For "L-1 INPUT"
Press **OK** or ▷ to select "VIDEO" or "S-VIDEO".
a–VIDEO : If a connected device's output is compatible only with regular video signals, set to "VIDEO".
b–S-VIDEO : If a connected device's output is compatible with Y/C signals, set to "S-VIDEO". This setting will let you take advantage of higher-quality S-VHS pictures. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)
5 Press **MENU** to return to normal screen.

- If "L-1 OUTPUT" is set to "S-VIDEO", it is impossible to set "L-1 INPUT" to "S-VIDEO".
- If "L-2 SELECT" is set to "DECODER", it is impossible to set "L-1 INPUT" to "S-VIDEO".

L-2 SELECT/INPUT Setting

The AV2 (L-2) IN/DECODER connector accepts either a composite signal (regular video signal) or a Y/C signal (a signal in which the luminance and chrominance signals are separated). Set "L-2 SELECT" to the appropriate mode depending on the type of unit connected to the rear panel AV2 (L-2) IN/DECODER connector of this recorder. Set "L-2 INPUT" to the appropriate mode depending on the output signals of the connected unit.



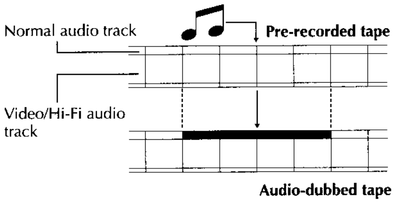
OUTPUT/INPUT SET
L-1 OUTPUT VIDEO
L-1 INPUT VIDEO
L-2 SELECT A/V
L-2 INPUT VIDEO
[▲▼] → OK
[MENU] : EXIT

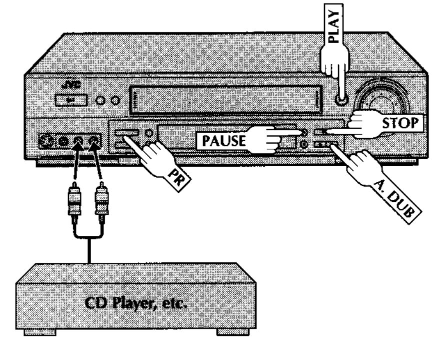
1 Press **MENU** to access the Main Menu screen.
2 Press △▽ to move the highlight bar (pointer) to "OUTPUT/INPUT SET", then press **OK** or ▷.
3 Press △▽ to move the highlight bar (pointer) to "L-2 SELECT" or "L-2 INPUT".
4 **For "L-2 SELECT"**
Press **OK** or ▷ to select "A/V", "DECODER" or "SAT".
a–A/V : To use this recorder as the recording deck with the player connected to the AV2 (L-2) IN/DECODER connector, or to use the satellite receiver connected to the AV2 (L-2) IN/DECODER connector.
b–DECODER : To use a decoder connected to the AV2 (L-2) IN/DECODER connector.
c–SAT : To view a satellite programme with the TV set while the recorder is turned off. (☞ pg. 30)
For "L-2 INPUT"
Press **OK** or ▷ to select "VIDEO" or "S-VIDEO".
a–VIDEO : If a connected device's output is compatible only with regular video signals, set to "VIDEO".
b–S-VIDEO : If a connected device's output is compatible with Y/C signals, set to "S-VIDEO". This setting will let you take advantage of higher-quality S-VHS pictures. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)
5 Press **MENU** to return to normal screen.

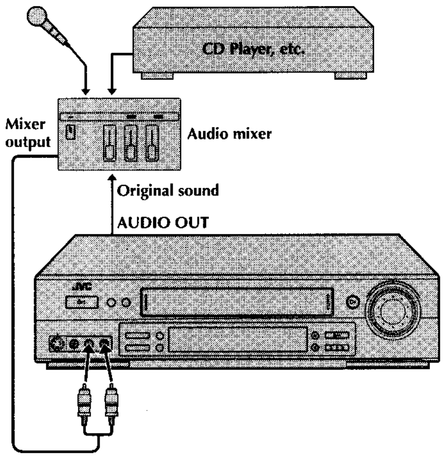
- If you have a satellite receiver or a decoder connected to the AV2 (L-2) IN/DECODER connector, be sure to set "L-2 SELECT" back to appropriate mode after editing.
- If you're not connecting a satellite receiver or a decoder to the AV2 (L-2) IN/DECODER connector, leave "L-2 SELECT" set to "A/V".
- The default setting is "A/V"; if the recorder's memory backup has expired due to a power cut or because the AC was removed from the recorder, "A/V" will be automatically selected when the power is restored to the recorder. If you are using a satellite receiver or a decoder, be sure to set "L-2 SELECT" back to appropriate mode.
- When "L-2 SELECT" is set to "SAT", "SAT" appears on screen or display panel instead of "L-2" or "L2".
- If "L-2 SELECT" is set to "DECODER", it is impossible to set "L-2 INPUT" to "S-VIDEO".
- If "L-1 OUTPUT" is set to "S-VIDEO", it is impossible to set "L-2 SELECT" to "DECODER".

Audio Dubbing

Audio dubbing replaces the normal audio sound of a previously recorded tape with a new soundtrack.







1 MAKE CONNECTIONS

Connect an audio component to the AUDIO L + R connectors on the recorder's front panel.

- When connecting monaural equipment, use only the recorder's AUDIO L connector.

2 SET INPUT MODE

Press **AUX** and/or **PR** so that "F-1" or "S-1" appears in place of a channel number.

3 LOCATE START POINT

Press **PLAY** to start playback of the tape in your recorder, and press **PAUSE** when you find the point where you want to start dubbing.

4 ENGAGE AUDIO DUBBING

Press **A. DUB**.

- It is possible to take the original sound recorded on the tape in your recorder and mix it with other sounds from a microphone, CD player etc. To perform this audio dubbing with audio mixing, connect as in the diagram on the left.
- Your recorder enters the Audio Dubbing Pause mode. ("○" blinks, "▷" and "▦" light up on the front display panel.)
- To perform audio dubbing with audio mixing, press **AUDIO** on the remote control to select "▷ + ◁ (L+R)" at this point.
  * Audio dubbing with audio mixing is not possible if you're using a monaural audio component, or if you don't have an audio mixer.

5 START DUBBING

Engage the audio component's Play mode, then press **PLAY** to start the tape in your recorder. Audio dubbing begins at this point.

- "○" blinks and "▷" is displayed on the front display panel.
- To stop dubbing temporarily, press **PAUSE**. Press **PLAY** to resume dubbing.

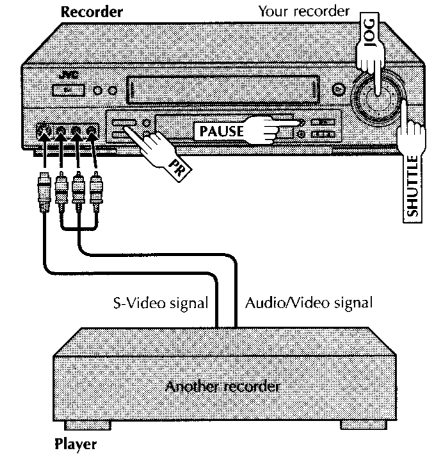
6 END AUDIO DUBBING

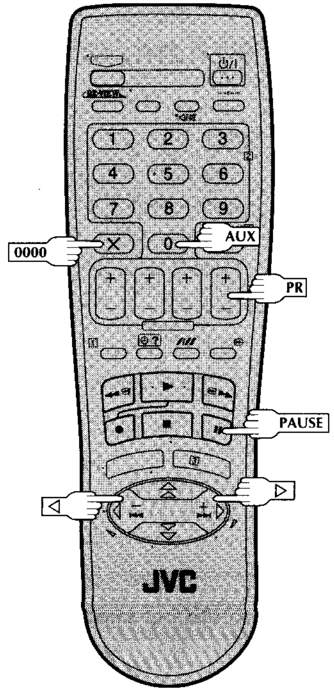
Press **STOP** to stop the tape in your recorder, and engage the audio component's Stop mode.

NOTES:

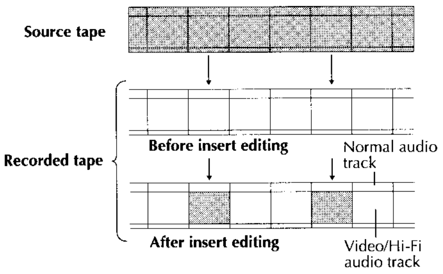
- *When monitoring the sound during Audio Dubbing, the normal soundtrack is automatically selected. If you wish to hear the mixed sound (Hi-Fi + Normal soundtracks), press **AUDIO** on the remote control to select "▷ + ◁ (L+R) + NORM" (☞ pg. 25).*
- *Audio dubbing stops automatically when the counter reaches "0:00:00", and the recorder enters the Play mode. Check the counter reading before dubbing.*
- *Audio dubbing is also possible using the rear panel AV1 (L-1) IN/OUT or AV2 (L-2) IN/DECODER connector. When using these connectors, make sure to select the correct input mode in step **2**.*
- *Audio dubbing cannot be performed on a cassette that has had its record safety tab removed.*
- *When playing back an audio-dubbed tape, press **AUDIO** on the remote control to select the soundtrack you wish to hear (☞ pg. 25).*

Insert Editing





Insert editing replaces part of the recorded scene with new material. Both the picture and Hi-Fi audio soundtrack are replaced with new ones, while the normal audio soundtrack remains unchanged. If you wish to change the normal audio track as well, use the audio dubbing function simultaneously. Use your video recorder as the recorder.



1 MAKE CONNECTIONS

Connect the player's VIDEO OUT or S-VIDEO OUT and AUDIO OUT connectors to your recorder's VIDEO or S-VIDEO and AUDIO input connectors on the front panel.

2 SET INPUT MODE

Press **AUX** and/or **PR** so that "F-1" for the VIDEO/AUDIO input connectors or "S-1" for S-VIDEO/AUDIO input connectors appears in place of a channel number.

3 LOCATE END POINT

Load the recording cassette into your recorder, and play it back to determine the edit-out point (the end of the segment to be replaced) using the **SHUTTLE** ring or the **JOG** dial or pressing ◁▷ and **PAUSE**.

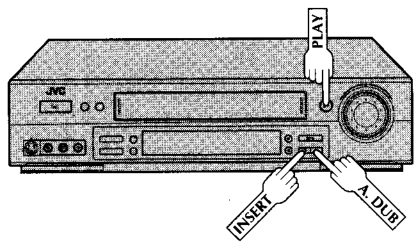
4 RESET THE COUNTER

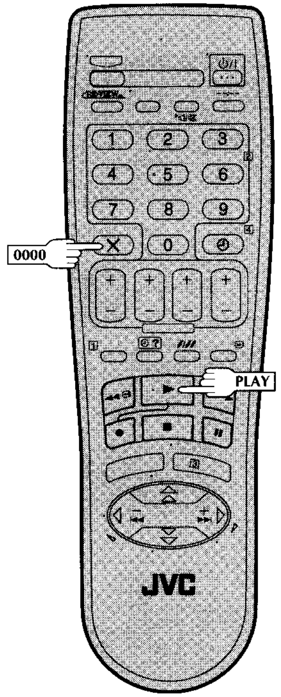
Press **0000** to change the counter display to "0:00:00".

5 LOCATE START POINT

Determine the edit-in point (the beginning of the segment to be replaced) using the **SHUTTLE** ring or the **JOG** dial or pressing ◁▷ and **PAUSE**.

- Be sure to engage the Still mode at the edit-in point.





6 ENGAGE INSERT EDITING

Press **INSERT**.

- Your recorder enters the Insert-Pause mode. ("○", "▷" and "▦" light up on the front display panel.)
- The TV screen changes from the still picture to the input source you are going to record.

7 START EDITING

Load the source cassette and play back the segment that is to be inserted. When you reach the start of the section of the source tape that you wish to insert, press **PLAY** to start the tape in your recorder; Insert Editing begins at this point.

- "○" and "▷" are displayed on the front display panel.

8 END INSERT EDITING

At counter "0:00:00", Insert Editing will stop automatically while the tape continues running in the Play mode. If you wish to stop Insert Editing before the specified edit-out point, press **0000**.

FOR AV INSERT EDITING

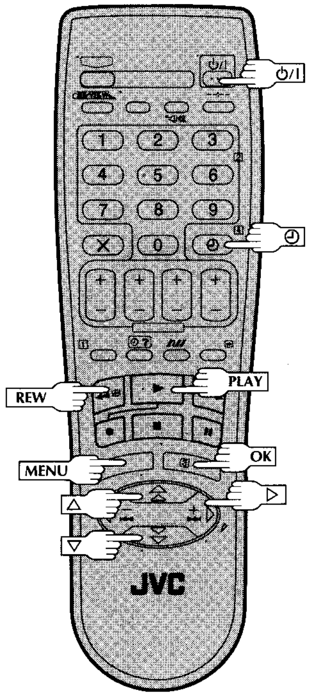
If you want to replace the picture, Hi-Fi audio soundtrack and normal audio soundtrack all at the same time...
... In step **6** above, after you press **INSERT**, press **A. DUB** also. ("○" and "▷" blink and "▦" lights up on the front display panel.)

NOTES:

- *Suitable leads can be obtained from your dealer.*
- *Insert editing is not possible with cassettes whose safety tab has been removed.*
- *When insert editing is performed on a tape that has been recorded on another video recorder, the inserted portion may appear distorted.*
- *In insert editing, the recording speed (SP/LP) is determined by the previous recording to be replaced. If the previous recording's speed changes within a single edit, the inserted picture will be distorted at the switching point.*
- *A small portion of the recording which precedes an insert edit may become erased.*
- *Insert Editing is also possible using the rear panel AV1 (L-1) IN/OUT or AV2 (L-2) IN/DECODER connector. When using these connectors, make sure to select the correct input mode in step 2.*

Other Functions

Turn on the TV and select the VIDEO channel (or AV mode).



⏻/I
⊙
REW
PLAY
MENU
OK
△
▷
▽
JVC

On-Screen Display

You can choose whether or not to have various operational indicators appear on screen, by setting this function ON or OFF.

1 ACCESS MAIN MENU SCREEN

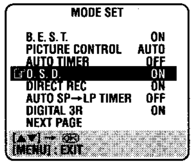
Press **MENU**.

2 ACCESS MODE SET SCREEN

Move the highlight bar (pointer) to "MODE SET" by pressing △▽, then press **OK** or ▷.

3 ENABLE/DISABLE ON-SCREEN DISPLAY

The default setting is "ON", so if you want on-screen displays, leave the setting as it is and go to step **4**. If you don't want the displays to appear, press △▽ to move the highlight bar (pointer) to "O.S.D." and press **OK** or ▷ to set "O.S.D." to "OFF".



MODE SET
B. E. S. T. ON
PICTURE CONTROL AUTO
AUTO TIMER OFF
O. S. D. ON
DIRECT REC ON
AUTO SP→LP TIMER OFF
DIGITAL 3R ON
NEXT PAGE
[▲▼] → OK
[MENU] : EXIT

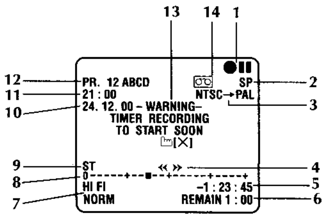
4 RETURN TO NORMAL

Press **MENU**.

NOTES:

- *When you use this recorder as the player for editing, be sure to set "O.S.D." to "OFF" before starting.*
- *During playback, the operation mode indicators may sometimes be disturbed depending on the type of tape being used.*

The superimposed indication on the TV screen tells you what the recorder is doing.



13
14
1
12
11
10
9
8
7
2
3
4
5
6
PR. 12 ABCD
21 : 00
24. 12. 00
SP
NTSC→PAL
– WARNING–
TIMER RECORDING
TO START SOON
[X]
ST
« »
0
HI FI
NORM
–1 : 23 : 45
REMAIN 1 : 00

1– Operation mode indicators
2– Tape speed SP/LP/EP (EP is for NTSC playback only)
3– NTSC playback display (☞ pg. 43)
4– Tape direction
5– Counter display
6– Tape remaining time indicator (☞ pg. 17)
7– Audio mode display (☞ pg. 25)
8– Tape position indicator (☞ pg. 14)
9– Type of Broadcast (☞ pg. 25)
10– Current day/month/year
11– Clock display
12– Channel position number and station name/Aux. indicator (L-1, L-2, SAT*, F-1 or S-1)
  * *When "L-2 SELECT" is set to "SAT" (☞ pg. 36), "SAT" appears instead of "L-2".*
13– Timer warning display (☞ pg. 19, 21)
14– Cassette loaded mark

Power Save Mode

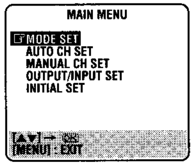
You can reduce the power consumption while the recorder is turned off.

1 ACCESS MAIN MENU SCREEN

Press **MENU**.

2 ACCESS MODE SET SCREEN

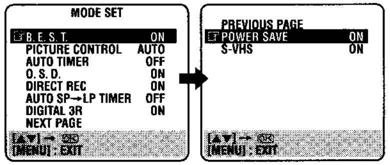
Press △▽ to move the highlight bar (pointer) to "MODE SET", then press **OK** or ▷.



MAIN MENU
MODE SET
AUTO CH SET
MANUAL CH SET
OUTPUT/INPUT SET
INITIAL SET
[▲▼] → OK
[MENU] : EXIT

3 SELECT POWER SAVE MODE

Press △▽ to move the highlight bar (pointer) to "POWER SAVE", then press **OK** or ▷ to set to "ON".



MODE SET
B. E. S. T. ON
PICTURE CONTROL AUTO
AUTO TIMER OFF
O. S. D. ON
DIRECT REC ON
AUTO SP→LP TIMER OFF
DIGITAL 3R ON
NEXT PAGE
[▲▼] → OK
[MENU] : EXIT
PREVIOUS PAGE
POWER SAVE ON
S-VHS ON
[▲▼] → OK
[MENU] : EXIT

4 RETURN TO NORMAL SCREEN

Press **MENU**.

NOTES:

- *During Power Save, the display panel will be turned off.*
- *The Just Clock function (☞ pg. 55) does not work while the Power Save mode is engaged.*
- *While the recorder is in the Power Save mode, the picture may be distorted momentarily when you turn on/off the recorder.*
- *Power Save does not work when ...*
  ... the recorder is in the Timer mode.
  ... the recorder's power is turned off after timer-recording (or Instant Timer Recording).
  ... the Auto Satellite Prog Recording mode is engaged (☞ pg. 30).
  ... "L-2 SELECT" is set to "DECODER" or "SAT" (☞ pg. 36).

Auto Timer

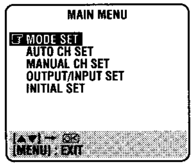
When "AUTO TIMER" is set to "ON" the timer is automatically engaged when the recorder power is turned off and automatically disengaged when the recorder is powered back on.

1 ACCESS MAIN MENU SCREEN

Press **MENU**.

2 ACCESS MODE SET SCREEN

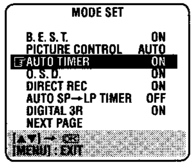
Press △▽ to move the highlight bar (pointer) to "MODE SET", then press **OK** or ▷.



MAIN MENU
MODE SET
AUTO CH SET
MANUAL CH SET
OUTPUT/INPUT SET
INITIAL SET
[▲▼] → OK
[MENU] : EXIT

3 SELECT MODE

Press △▽ to move the highlight bar (pointer) to "AUTO TIMER", then press **OK** or ▷ to select either "ON" or "OFF".



MODE SET
B. E. S. T. ON
PICTURE CONTROL AUTO
AUTO TIMER ON
O. S. D. ON
DIRECT REC ON
AUTO SP→LP TIMER OFF
DIGITAL 3R ON
NEXT PAGE
[▲▼] → OK
[MENU] : EXIT

4 RETURN TO NORMAL SCREEN

Press **MENU**.

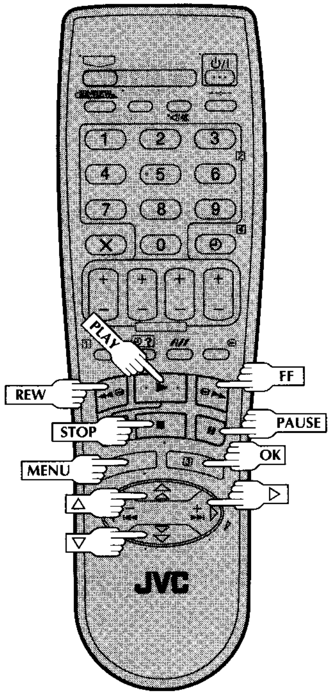
NOTE:

*For safety, when "AUTO TIMER" is set to "OFF", all other recorder functions are disabled while the Timer mode is engaged. To disengage the timer, press ⊙ (**TIMER**).*

Next Function Memory

The Next Function Memory "tells" the recorder what to do after rewinding. Before continuing, make sure the recorder is in the Stop mode.

a– For Automatic Start Of Playback After Tape Rewind . . .
. . . press **REW**, then press **PLAY** within 2 seconds.
b– For Automatic Power Off After Tape Rewind . . .
. . . press **REW**, then press ⏻/I within 2 seconds.
c– For Automatic Timer Standby After Tape Rewind . . .
. . . press **REW**, then press ⊙ (**TIMER**) within 2 seconds.

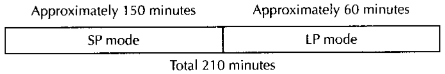


Auto SP→LP Timer

If, when timer-recording in SP mode, there is not enough tape to record the entire programme, the recorder automatically switches to LP mode to allow complete recording.

For Example . . .

Recording a programme of 210 minutes in length onto a 180-minute tape



Make sure you set "AUTO SP→LP TIMER" to "ON" at the Mode Set screen before the timer-recording starts.

1 ACCESS MAIN MENU SCREEN

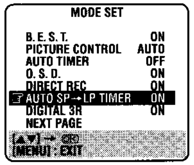
Press **MENU**.

2 ACCESS MODE SET SCREEN

Press △▽ to move the highlight bar (pointer) to "MODE SET", then press **OK** or ▷.

3 SELECT MODE

Press △▽ to move the highlight bar (pointer) to "AUTO SP→LP TIMER", then press **OK** or ▷ to select "ON".



```
            MODE SET

B. E. S. T.                 ON
PICTURE CONTROL           AUTO
AUTO TIMER                 OFF
O. S. D.                    ON
DIRECT REC                  ON
AUTO SP→LP TIMER            ON
DIGITAL 3R                  ON
NEXT PAGE
[▲▼] → OK
[MENU] : EXIT
```

4 RETURN TO NORMAL SCREEN

Press **MENU**.

NOTES:

- *The Auto SP→LP Timer feature is not available during ITR (Instant Timer Recording), and the feature will not work properly with any tapes longer than E-180 or with some tapes of shorter lengths.*
- *If you have programmed the recorder to timer-record 2 or more programmes, the second programme and those thereafter may not fit on the tape if you set "AUTO SP→LP TIMER" to "ON". In this case, make sure the mode is not engaged, then set the tape speed manually during timer programming.*
- *In order to ensure that the recording fits on the tape, this feature may leave a short non-recorded section at the end of the tape.*
- *There may be some picture noise and sound disturbance at the point on the tape where the recorder switches from SP to LP mode.*
- *If you perform timer recording with both PDC and the Auto SP→LP Timer activated, and the programme goes beyond its originally scheduled length, there may be times when the programme cannot be recorded in its entirety.*

Repeat Playback

Your video recorder can automatically play back the whole tape 100 times repeatedly.

1 START PLAYBACK

Press **PLAY**.

2 ACTIVATE REPEAT PLAYBACK

Press **PLAY** and hold for over 5 seconds, then release.

- The Play indicator (▷) on the display panel blinks slowly.
- The tape plays 100 times automatically, and then stops.

3 STOP PLAYBACK

Press **STOP** at any time to stop playback.

NOTE:

*Pressing **PLAY**, **REW**, **FF** or **PAUSE** also stops Repeat Playback.*

NTSC Playback

Your video recorder is equipped with NTSC circuitry that can play back NTSC tapes.

1 LOAD A CASSETTE

Insert a cassette recorded in NTSC.

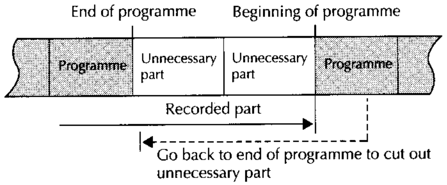
2 START PLAYBACK

Press **PLAY**.

- "NTSC→PAL" appears on the screen for about 5 seconds.
- Some TVs shrink the picture vertically and place black bars at the top and bottom of the screen. This is not a malfunction on the part of either the video recorder or the TV.
- The picture may roll up and down. This can be corrected using the V-HOLD control found on some TVs. (This cannot be corrected if the TV does not have a V-HOLD control.)
- The counter and tape remaining time readings will be incorrect.
- During search, still, or frame-by-frame playback, the picture will be distorted, and there may be a loss of colour.
- Depending on the type of TV, the top and bottom portions of superimposed displays may be cut off during NTSC playback.

Retake

You can cut out unnecessary parts of a TV programme while you're recording it.



1 ENGAGE RECORD-PAUSE MODE

Press **PAUSE** during recording.

2 LOCATE START POINT

Turn the **JOG** dial to the left or right (or hold down **REW** or **FF**) and release it when you reach the point where you want to resume recording.

* Your recorder returns to the Record-Pause mode.

3 RESUME RECORDING

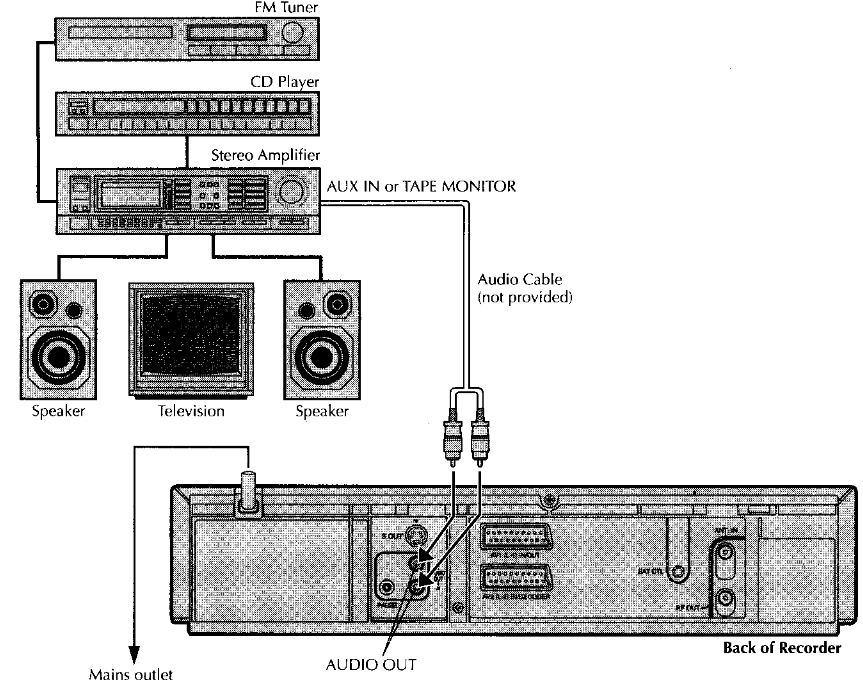
Press **PLAY** when you wish to resume recording.

NOTE:

Retake function does not work during Direct Rec (☞ pg. 11).

Connection To A Stereo System

These instructions enable you to connect your video recorder to your Hi-Fi stereo system (if you have one) and listen to the soundtrack through the stereo.



1 MAKE CONNECTIONS

Connect the AUDIO OUT L and R connectors on your video recorder to the AUX IN or TAPE MONITOR terminals on your stereo system's receiver or amplifier.

NOTES:

- *When connecting your recorder's audio output connectors to a stereo amplifier, make sure you connect L and R correctly.*
- *If you can receive NICAM TV broadcasts in your area, this recorder can record them independently of the TV set and play them back through the connected stereo system.*
- *When listening to sound through the connected stereo system, turn the TV's volume down completely.*

CAUTIONS:

- This recorder has a dynamic range of more than 80 dB with regards to its Hi-Fi audio capability. It is recommended that you check the maximum level if you are going to listen to the Hi-Fi audio signals through a stereo amplifier. A sudden surge in the input level to the speakers may damage them.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set as this can adversely affect the video playback picture.

VIDEO Plus+ Setup

IMPORTANT

Normally, Auto Set Up (☞ pg. 8), Preset Download (☞ pg. 9) or Auto Channel Set (☞ pg. 48) sets the Guide Program Numbers automatically. You need to set the Guide Program Numbers manually only in the following cases.

- *When timer-programming with the VIDEO Plus+ system, the preset position, where the station you wish to record is received on your recorder, is not selected or when you add a channel after Auto Set Up or Auto Channel Set has taken place.*

— Set the Guide Program Number for that station manually.

- *When you wish to timer-record a satellite programme with the VIDEO Plus+ system.*

— Set the Guide Program Numbers for all satellite broadcasts received on your satellite receiver.

Turn on the TV and select the VIDEO channel (or AV mode).

Guide Program Number Set

1 ACCESS MAIN MENU SCREEN

Press **MENU**.

2 ACCESS INITIAL SET SCREEN

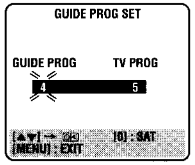
Press △▽ to move the highlight bar (pointer) to "INITIAL SET", then press **OK** or ▷.

3 ACCESS GUIDE PROG SET SCREEN

Press △▽ to move the highlight bar (pointer) to "GUIDE PROG SET", then press **OK** or ▷.

4 ENTER GUIDE PROG NUMBER

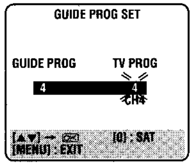
Press △▽ to enter the Guide Program number for the desired station as shown in the TV listings. Then press **OK** or ▷.



(Ex.) When inputting the Guide Program number 4 for CH4.

5 ENTER RECEIVING PRESET POSITION NUMBER

Press the **NUMBER** key "0" to select "TV PROG" or "SAT". Then press △▽ to input the number of the preset position on which the Guide Program number's broadcast is received by the recorder or the satellite receiver. Then press **OK** or ▷.



(Ex.) If CH4 is received on preset position 4.

- To timer-record a satellite programme with VIDEO Plus+, you need to install the provided Satellite Controller and perform the procedure described in "Satellite Receiver Control Setting" (☞ pg. 12).
- Repeat steps **4** and **5** as necessary.

6 RETURN TO NORMAL SCREEN

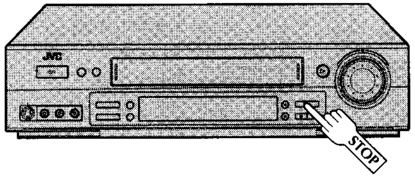
Press **MENU**.

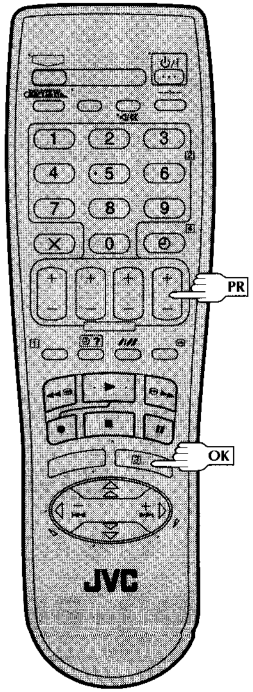
Guide Program Number

"Guide Program (GUIDE PROG) number" refers to the assigned TV station numbers, according to broadcast area, for the VIDEO Plus+ timer recording. The Guide Program numbers can be found in most TV listings.

Video Channel Set

Video Channel (RF Output Channel) is the channel on which your TV receives picture and sound signals from the video recorder through the RF cable.





IMPORTANT
Perform the following steps only if —
— Video Channel Set has not been done correctly by the Auto Set Up function (☞ pg. 8).
— interference appears in the TV picture after you have moved to a different area or a new station has started broadcasting in your area.
— you change the connection between your recorder and TV from RF connection to AV or S-VIDEO connection, or vice versa.

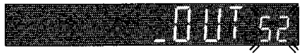
- ***If you have connected the video recorder to your TV via both the provided RF cable and a 21-pin SCART cable (AV connection), or via the provided RF cable, an S-Video cable and an audio cable (S-VIDEO connection), you do not need the video channel so you have to set the video channel to off. — Go to "With AV or S-VIDEO Connection" below.***
- ***If you have connected the video recorder to your TV via the provided RF cable only (RF connection), you have to set the correct video channel— Go to "With RF Connection" on page 47.***

With AV or S-VIDEO Connection

Before performing the following procedure, make sure that:
- the mains power cord is plugged into the mains outlet.
- the video recorder is turned off and there is no cassette inserted in the recorder.
- batteries have been installed in the remote control.

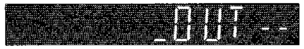
1 ACCESS VIDEO CHANNEL SET MODE

Press and hold down **STOP** on the recorder until the display panel shows the following.



2 SET VIDEO CHANNEL

Press **PR –** until the display panel shows "_OUT– –".

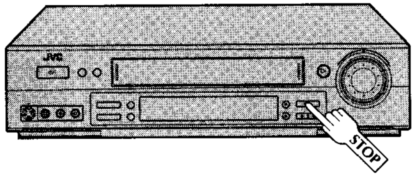


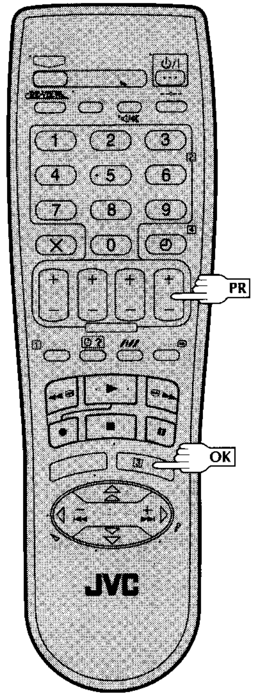
- Now the video channel is set to off.

3 EXIT VIDEO CHANNEL SET MODE

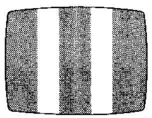
Press **OK**.

To view picture signals from the video recorder, set your TV to its AV mode. Refer to the instructions supplied with your TV set for how to do this.





TEST SIGNAL



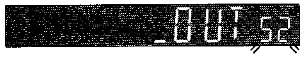
The channel on which the screen on the left appears clearly in step **2** is your Video Channel.

With RF Connection

Before performing the following procedure, make sure that:
- the mains power cord is plugged into the mains outlet.
- the video recorder is turned off and there is no cassette inserted in the recorder.
- the connected TV is turned on.
- batteries have been installed in the remote control.

1 ACCESS VIDEO CHANNEL SET MODE

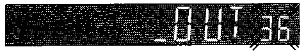
Press and hold down **STOP** on the recorder until the display panel shows the following.



2 SET VIDEO CHANNEL

Press **PR+** or **–** to set the video recorder to a vacant channel between 22 and 69 which is not occupied by any local station in your area. Refer to list on page 54 for details of broadcast stations in your area.

(Ex.) If channel 36 is available in your area



Then set your TV to UHF channel 36. (Refer to the instructions supplied with your TV set for how to do this.)

- If the two vertical white bars appear clearly on the screen as shown in the illustration at bottom left, go to step **3**.
- If the two vertical white bars do not appear clearly, re-set the video recorder to another vacant channel and try again.

IMPORTANT
- *If you set the video recorder to a channel which is occupied by a local station or has neighbouring channels that are occupied by local stations, the picture reception quality will be affected and some interference noise will appear on the TV screen. Be sure to select a vacant channel which has no broadcast on neighbouring channels.*
- *If you cannot obtain the two vertical white bars clearly with any channel between 22 and 69, consult your JVC dealer.*

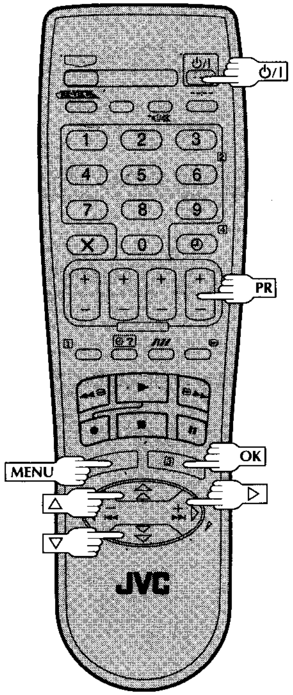
3 EXIT VIDEO CHANNEL SET MODE

Press **OK**.

To view picture signals from the video recorder, set your TV to the Video Channel.

Tuner Set

Turn on the TV and select the VIDEO channel (or AV mode).



IMPORTANT
Perform the following steps only if —
— Auto Channel Set has not been set correctly by Auto Set Up function (☞ pg. 8) or Preset Download (☞ pg. 9).
— you have moved to a different area or if a new station starts broadcasting in your area.

Your recorder needs to memorise all necessary stations in preset positions in order to record TV programmes. Auto Channel Set automatically assigns all receivable stations in your area to call them up by using the **PR** buttons without going through any vacant channel.

Auto Channel Set

1 TURN ON THE RECORDER

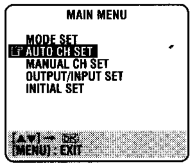
Press ⏻/I.

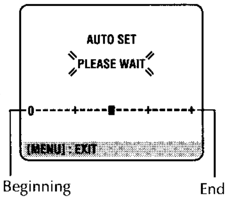
2 ACCESS MAIN MENU SCREEN

Press **MENU**.

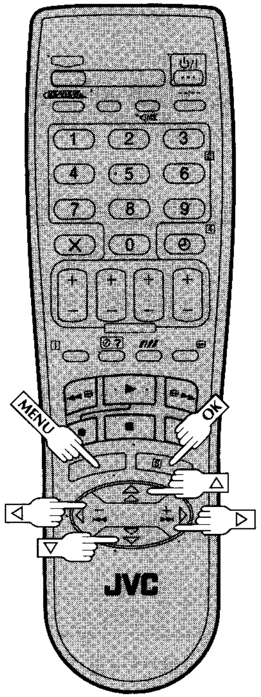
3 PERFORM AUTO CHANNEL SET

Move the highlight bar (pointer) to "AUTO CH SET" by pressing △▽, then press **OK** or ▷.


```
MAIN MENU

  MODE SET
☞ AUTO CH SET
  MANUAL CH SET
  OUTPUT/INPUT SET
  INITIAL SET

[▲▼] → OK
[MENU] : EXIT
```

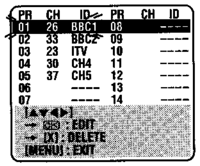

```
AUTO SET
PLEASE WAIT

0-----+----■----+-----+

[MENU] : EXIT
```

- When you have connected the video recorder to a TV offering T-V Link via the AV connection (☞ pg. 6) and the TV is turned on, the recorder automatically performs the Preset Download (☞ pg. 9) even if you select "AUTO CH SET".
- The Auto Set screen appears, and remains on screen while the recorder searches for receivable stations. As Auto Channel Set progresses, the "■" mark on the screen moves from left to right. Wait until the screen as shown in step **4** appears.
- Auto Channel Set usually takes about 4 – 12 minutes; the duration varies by area.



4 VIEW CONFIRMATION SCREEN

After "SCAN COMPLETED" is displayed on the screen for about 5 seconds, a Confirmation screen looking like the one on the right appears. The stations your recorder located appear on a Confirmation screen — preset positions (PR), channels (CH) and station names (ID – ☞ pg. 53). The blueback screen and the programme currently being broadcast by the station which is blinking appear alternately for 8 seconds each.


```
PR  CH  ID    PR  CH  ID
01  26  BBC1  08      ----
02  33  BBC2  09      ----
03  23  ITV   10      ----
04  30  CH4   11      ----
05  37  CH5   12      ----
06      ----  13      ----
07      ----  14      ----
[▲▼◀▶]
→ OK : EDIT
→ [X] : DELETE
[MENU] : EXIT
```

To view the next page, use the △▽ ◁▷ button on the remote control.

- The Guide Program numbers will also be set automatically during Auto channel Set.

5 RETURN TO NORMAL SCREEN

Press **MENU**.

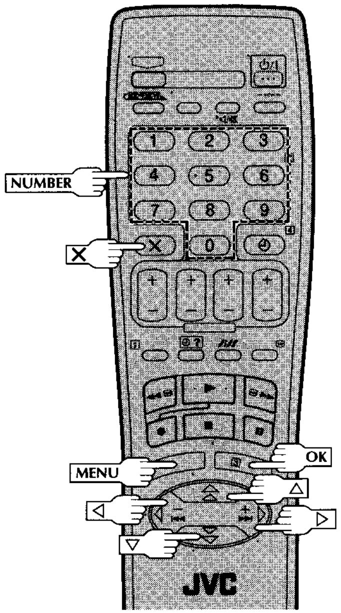
- Using the Confirmation screen, you can skip or add preset positions, enter station names and perform other operations. Refer to pages 50 – 54 for the procedures.
- Depending on reception conditions, the stations may, on occasion, not be stored in order, and the station names may not be stored correctly.

IMPORTANT

- In certain reception conditions, station names may not be stored correctly, and auto Guide Program Number Set may not work properly. If the Guide Program numbers are not set properly, when you timer-record a TV programme using the VIDEO Plus+ system, the recorder will record a TV programme of a different station. When programming the timer using the VIDEO Plus+ system, be sure to check that the preset position corresponding to the broadcasting station you wish to record has been selected (☞ pg. 18, "VIDEO Plus+ Timer Programming").
- Your video recorder memorizes all detected stations even if reception of some of them is poor. In these cases picture quality may be poor. To delete those stations which have an unacceptable picture ☞ "Delete A Channel" on page 51.

NOTES:

- *Fine tuning is performed automatically during Auto Channel Set. If you wish to perform it manually, refer to page 51.*
- *If, for any reason, you perform Auto Channel Set when the aerial cable is not connected properly, "SCAN COMPLETED -NO SIGNAL-" appears on the screen in step **4**. When this happens, make sure of the aerial connection and press **OK**; Auto Channel Set will take place again.*



Storing Channels Manually

To store channels that were not stored during Auto Set Up (☞ pg. 8), Preset Download (☞ pg. 9) or Auto Channel Set (☞ pg. 48).

1 ACCESS MAIN MENU

Press **MENU**.

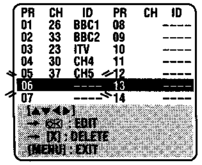
2 ACCESS CONFIRMATION SCREEN

Press △▽ to move the highlight bar (pointer) to "MANUAL CH SET", then press **OK** or ▷. The Confirmation screen appears.

3 SELECT POSITION

Press △▽ ◁▷ until an open position in which you want to store a channel begins blinking, then press **OK**. The Manual Channel Set screen appears.

(Ex.) To store in position 6.

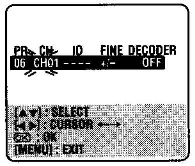


```
PR  CH  ID    PR  CH  ID
01  26  BBC1  08      ----
02  33  BBC2  09      ----
03  23  ITV   10      ----
04  30  CH4   11      ----
05  37  CH5   12      ----
06      ----  13      ----
07      ----  14      ----
[▲▼◀▶]
→ OK : EDIT
→ [X] : DELETE
[MENU] : EXIT
```

The blueback screen and the programme currently being broadcast by the selected channel appear alternately for 8 seconds each.

4 SELECT BAND

Press △▽ to change the band between CH (regular) and CC (cable), then press ▷.



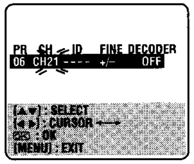
```
PR  CH    ID    FINE  DECODER
06  CH01  ----  +/-   OFF
[▲▼] : SELECT
[◀▶] : CURSOR ⟷
OK : OK
[MENU] : EXIT
```

The blueback screen and the programme currently being broadcast by the selected channel appear alternately for 8 seconds each.

5 INPUT CHANNEL

Press the **NUMBER** keys to input the channel number you want to store.

- To input the registered station name (ID – ☞ pg. 53), press ▷ until "– – – –" (ID setting) begins blinking, then press △▽.
- For fine tuning adjustment, press ▷ until "+/–" begins blinking, then press △▽. While tuning, "+" or "–" appears.



```
PR  CH    ID    FINE  DECODER
06  CH21  ----  +/-   OFF
[▲▼] : SELECT
[◀▶] : CURSOR ⟷
OK : OK
[MENU] : EXIT
```

The blueback screen and the programme currently being broadcast by the selected channel appear alternately for 8 seconds each.

- When "L-2 SELECT" is set to "A/V" or "SAT", the "DECODER" setting cannot be changed (☞ pg. 36).

6 ENTER NEW CHANNEL INFORMATION

Press **OK** and the Confirmation screen appears.

- Repeat steps **3** through **6** as necessary.

7 CLOSE CONFIRMATION SCREEN

Press **MENU**.

- To change positions, see "Change Station Preset Position" (☞ pg. 51).
- If you wish to set station names other than the ones registered in your recorder, ☞ "Set Stations (B)" on page 52.

ATTENTION

Guide Program numbers are not set when channels are stored manually. If an attempt is made at timer programming with the VIDEO Plus+ system in this state, the "GUIDE PROG SET" screen appears; set the Guide Program numbers on this screen. ☞ "ATTENTION – Regarding Guide Program Number Set" on page 19. Or perform "Guide Program Number Set" (☞ pg. 45).

Delete A Channel

Perform steps **1** and **2** of "Storing Channels Manually" on page 50 to access the Confirmation screen before continuing.

1 SELECT ITEM

Press △▽ ◁▷ until the item you want to delete begins blinking.

2 DELETE CHANNEL

Press X.

- The item directly beneath the cancelled one moves up one line.
- Repeat steps **1** and **2** as necessary.

3 CLOSE CONFIRMATION SCREEN

Press **MENU**.

When Receiving A Scrambled Broadcast

1 SELECT DECODER MODE

Set "L-2 SELECT" to "DECODER" (☞ pg. 36).

2 ACCESS CONFIRMATION SCREEN

Perform steps **1** and **2** of "Storing Channel Manually" on page 50.

3 SELECT POSITION

Press △▽ ◁▷ to select the channel position broadcasting scrambled programmes, then press **OK** twice.

4 CHANGE DECODER SETTING

Press ▷ until "OFF" (decoder setting) begins blinking, and set it to "ON" by pressing △▽.

5 RETURN TO CONFIRMATION SCREEN

Press **OK**.

- Repeat steps **3** through **5** as necessary.

6 CLOSE CONFIRMATION SCREEN

Press **MENU**.

NOTE:

Scrambled programmes are not currently broadcast in the U.K.

Change Station Preset Position

Perform steps **1** and **2** of "Storing Channels Manually" on page 50 to access the Confirmation screen before continuing.

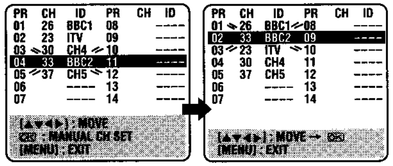
1 SELECT ITEM

Press △▽ ◁▷ until the item you want to move begins blinking. Then press **OK** and the station name (ID) and its channel (CH) number begin blinking.

2 SELECT NEW POSITION

Press △▽ ◁▷ to move the station to the new preset position, then press **OK**.

Example: If you moved the station in position 4 to position 2, the stations originally in positions 2 and 3 each move down one space.



```
PR  CH  ID    PR  CH  ID
01  26  BBC1  08      ----
02  23  ITV   09      ----
03  30  CH4   10      ----
04  33  BBC2  11      ----
05  37  CH5   12      ----
06      ----  13      ----
07      ----  14      ----
[▲▼◀▶] : MOVE
OK : MANUAL CH SET
[MENU] : EXIT
```

```
PR  CH  ID    PR  CH  ID
01  26  BBC1  08      ----
02  33  BBC2  09      ----
03  23  ITV   10      ----
04  30  CH4   11      ----
05  37  CH5   12      ----
06      ----  13      ----
07      ----  14      ----
[▲▼◀▶] : MOVE → OK
[MENU] : EXIT
```

- Repeat steps **1** and **2** as necessary.

3 CLOSE CONFIRMATION SCREEN

Press **MENU**.

Fine-Tuning Channels Already Stored

Perform steps **1** and **2** of "Storing Channels Manually" on page 50 to access the Confirmation screen before continuing.

1 SELECT CHANNEL TO FINE-TUNE

Press △▽ ◁▷ until the channel you want to tune begins blinking.

2 ACCESS MANUAL CHANNEL SET SCREEN

Press **OK** twice. The Manual Channel Set screen appears.

3 PERFORM TUNING

Press ▷ until "+/–" begins blinking, then press △▽ until the picture is clearest. Then press **OK**.

- The Confirmation screen appears.
- Repeat steps **1** through **3** as necessary.

4 CLOSE CONFIRMATION SCREEN

Press **MENU**.

Set Stations (A)

Set station names that are registered in your recorder.

Perform steps **1** and **2** of "Storing Channels Manually" on page 50 to access the Confirmation screen before continuing.

1

SELECT ITEM

Press △▽ ◁▷ until the item you want begins blinking.

2

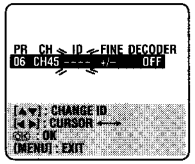
ACCESS MANUAL CHANNEL SET SCREEN

Press **OK** twice.

3

SELECT NEW STATION

Press ▷ until the station name (ID) begins blinking, then press △▽ until the new station's name (ID) you want to store begins blinking.
Registered station names (☞ pg. 53) appear as you press △▽.



```
PR  CH   ID   FINE DECODER
06  CH45 ---- +/-      OFF

[▲▼] : CHANGE ID
[◀ ▶] : CURSOR ←→
OK : OK
[MENU] : EXIT
```

4

SWITCH STATIONS

Press **OK**.

- The Confirmation screen appears.
- Repeat steps **1** through **4** as necessary.

5

CLOSE CONFIRMATION SCREEN

Press **MENU**.

Set Stations (B)

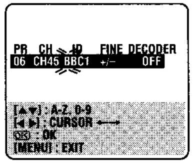
Set station names other than the ones registered in your recorder.

Perform steps **1** and **2** of "Storing Channels Manually" on page 50 to access the Confirmation screen and then perform steps **1** and **2** of "Set Stations (A)" on the left before continuing.

1

SELECT STATION NAME CHARACTER

Press ▷ until the first letter of the station name begins blinking.



```
PR  CH   ID   FINE DECODER
06  CH45 BBC1 +/-      OFF

[▲▼] : A-Z, 0-9
[◀ ▶] : CURSOR ←→
OK : OK
[MENU] : EXIT
```

2

ENTER NEW CHARACTER

Press △▽ to cycle through the characters (A–Z, 0–9, –, ✱, +, ⎵ (space)) and stop when the desired character is indicated, then press ▷ to enter. Enter the remaining characters the same way (maximum of 4).
After entering all characters, press **OK**.

- The Confirmation screen appears.
- If you make a mistake, press ◁ until the incorrect character begins blinking. Then enter the correct character by pressing △▽.

3

CLOSE CONFIRMATION SCREEN

Press **MENU**.

NOTE:

The characters available for the station name (ID) are A–Z, 0–9, –, ✱, +, ⎵ (space) (maximum of 4).

TV Station And ID List

STATION NAME	ID*
Anglia TV	ANGL
ARD	ARD
ARTE	ARTE
BBC Group	BBC
BBC1	BBC1
BBC2	BBC2
Berlin 1	BLN1
Berlin 2	BLN2
Border TV	BORD
Bayern1	BR1
Bayern3	BR3
BRT1	BRT1
BRT2	BRT2
Children Ch	CHLD
Canal +	CH+
CNN	CNN
Channel TV	CHNL
Central TV	CNTR
Channel 4	CH 4
Channel 5	CH 5
DRS	DRS
DR TV	DRTV
DSF	DSF
Euronews	EURN
Euronews	EURO
Eurosports	EURS
France1	FR1
France2	FR2
France3	FR3
Granada TV	GRNA
Grampian TV	GRMP
Hessen1	HR1
Hessen3	HR3
HRT	HRT
HTV	HTV
ITV Network	ITV
Kabelkanal	KABL
London	LNDN
MDR	MDR
MTV	MTV
Nord3	N3
NDR1	NDR1
NDR3	NDR3
NED1	NED1
NED2	NED2
NED3	NED3
Network 2	NET2
NRK	NRK
N-TV	N-TV
Offener Kanal	OKAN
ORF1	ORF1
ORF2	ORF2
ORF3	ORF3
OWL 3	OWL3
Premiere	PRMI
PRO7	PRO7
RAI1	RAI1
RAI2	RAI2
RAI3	RAI3
RB1	RB1
RB3	RB3
Rikisutvarpid-S	RKPS
RTBF 1	RTB1
RTBF 2	RTB2
RTE 1	RTE1
RTL	RTL
RTL 2	RTL2
RTP	RTP
SAT	SAT
SAT 1	SAT1
Scottish TV	SCOT
SC4	SC4
SDR	SDR
SDR1	SDR1
SFB1	SFB1
SFB3	SFB3
SKY	SKY
Sky One	SKY1
Sky Net	SKYN
Sport	SPRT
SR 1	SR1
Super RTL	SRTL
STV Test	STVT
STV 1	STV1
STV 2	STV2
Suedwest3	SWR
SWF 1	SWF1
Schweiz4	SWZ4
TYNE TEES	TEES
Text	TEXT
TF1	TF1
TNT int	TNT
TRT int	TRT
TSI	TSI
TSR	TSR
TSW	TSW
TVE	TVE
TV Polonia	TVPA
TVP 1	TVP1
TVP 2	TVP2
TVS	TVS
TV2	TV2
TV5	TV5
Tele Zurich	TZUR
Ulster TV	ULST
Veronica	VERN
VIVA	VIVA
VIVA2	VIV2
VOX	VOX
VTM	VTM
VT4	VT4
West1	WDR1
West3	WDR3
YLE 1	YLE1
YLE 2	YLE2
Yorkshire TV	YORK
ZDF	ZDF
Zurich 1	ZUR1
3SAT	3SAT

* The "ID" abbreviation is what is shown on-screen in lieu of the station name. The "ID" abbreviation is listed in the Confirmation screen and is displayed on the TV screen each time the recorder is tuned to a different station.

TV Station Channel Number Guide

For customers in the U.K.

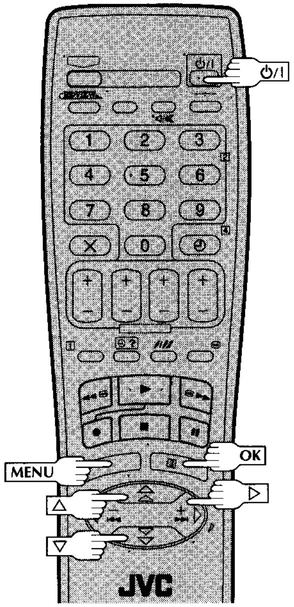
Only the main stations are listed. There are in addition many relay stations, and full lists are available from the BBC and ITV.

	BBC1	BBC2	ITV	CH4	CH5
London & South-East					
Bluebell Hill	40	46	43	65	—
Crystal Palace	26	33	23	30	37
Dover	50	56	66	53	—
Heathfield	49	52	64	67	—
Oxford	57	63	60	53	49
South-West					
Beacon Hill	57	63	60	53	—
Caradon Hill	22	28	25	32	—
Huntshaw Cross	55	62	59	65	67
Redruth	51	44	41	47	37
Stockland Hill	33	26	23	29	—
Channel Islands					
Fremont Point	51	44	41	47	—
South					
Hannington	39	45	42	66	35
Midhurst	61	55	58	68	—
Rowridge	31	24	27	21	—
West					
Mendip	58	64	61	54	37
East					
Sandy Heath	31	27	24	21	39
Sudbury	51	44	41	47	35
Tacolneston	62	55	59	65	52
Midlands					
Ridge Hill	22	28	25	32	35
Sutton Coldfield	46	40	43	50	37
The Wrekin	26	33	23	29	35
Waltham	58	64	61	54	35
North					
Belmont	22	28	25	32	56
Emley Moor	44	51	47	41	37

	BBC1	BBC2	ITV	CH4	CH5
North-West					
Caldbeck	30	34	28	32	56
Winter Hill	55	62	59	65	48
North-East					
Bilsdale West Moor	33	26	29	23	35
Chatton	39	45	49	42	—
Pontop Pike	58	64	61	54	68
Scotland					
Angus	57	63	60	53	—
Black Hill	40	46	43	50	37
Sandale	22	—	—	—	—
Caldbeck	—	34	28	32	56
Creigkelly	31	27	24	21	48
Darvel	33	26	23	29	35
Durris	22	28	25	32	67
Eitshal	33	26	23	29	—
Keelylang Hill	40	46	43	50	—
Knock More	33	26	23	29	—
Rosemarkie	39	45	49	42	67
Rumster Forest	31	27	24	21	—
Selkirk	55	62	59	65	52
Wales					
Blaenplwyf	31	27	24	21	56
Carmel	57	63	60	53	—
Llanddona	57	63	60	53	—
Moel-y-Parc	52	45	49	42	—
Presely	46	40	43	50	37
Wenvoe	44	51	41	47	—
Northern Ireland					
Brougher Mountain	22	28	25	32	—
Divis	31	27	24	21	37
Limavady	55	62	59	65	—

Clock Set

Turn on the TV and select the VIDEO channel (or AV mode).



Just Clock
The Just Clock function provides accurate time keeping through automatic adjustments at regular intervals, by reading data from a PDC signal.
The Just Clock option can be set "ON" or "OFF" at the Clock Set screen (the default setting is "ON"). Press **OK** until the Just Clock setting begins blinking, then press △▽ to change the setting.

IMPORTANT: If you turn the Just Clock function off, the accuracy of your recorder's built-in clock may be impaired, which could adversely affect timer recording.

NOTES:

- *Just Clock (when set to "ON") adjusts the recorder's built-in clock every hour, except for 23:00, 0:00, 1:00 and 2:00.*
- *Just Clock is not effective when . . .*
  - *– the recorder's power is on.*
  - *– the recorder is in the Timer mode.*
  - *– a difference of more than 3 minutes exists between the built-in clock's time and the actual time.*
  - *– the recorder is in the Auto Satellite Prog Rec mode (☞ pg. 30)*
  - *– "L-2 SELECT" is set to "SAT". (☞ pg. 36)*
- *If Just Clock is set to "ON", the recorder's clock is automatically adjusted at the start/end of Summer Time.*
- *Just Clock may not function properly in poor reception conditions.*

IMPORTANT
If you performed Auto Set Up (☞ pg. 8), Preset Download (☞ pg. 9) or Auto Channel Set (☞ pg. 48), without ever having set the clock previously, the recorder's built-in clock is also set automatically.
Perform the following steps only if —
— Auto Clock Set has not been performed correctly by Auto Set Up, Preset Download or Auto Channel Set.
or
— the recorder's memory backup has expired.
or
— you want to change Just Clock setting (☞ "Just Clock" in the left column).

1 TURN THE RECORDER ON

Press ⏻/I.

2 ACCESS MAIN MENU SCREEN

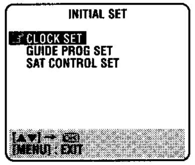
Press **MENU**.

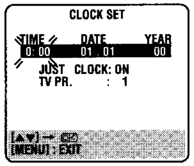
3 ACCESS INITIAL SET SCREEN

Move the highlight bar (pointer) to "INITIAL SET" by pressing △▽, then press **OK** or ▷.

4 ACCESS CLOCK SET SCREEN

Move the highlight bar (pointer) to "CLOCK SET" by pressing △▽, then press **OK** or ▷. The Clock Set screen appears.


INITIAL SET
CLOCK SET
GUIDE PROG SET
SAT CONTROL SET
[▲▼] → OK
[MENU] : EXIT


CLOCK SET
TIME DATE YEAR
0:00 01.01 00
JUST CLOCK: ON
TV PR. : 1
[▲▼] → OK
[MENU] : EXIT

5 SET DATE AND TIME

Press △▽ to set the time, then press **OK** or ▷. The "date" display begins blinking. Repeat the same procedure to set the date and year.

- When you set the time, press and hold △▽ to change the time by 30 minutes.
- When you set the date, press and hold △▽ to change the date by 15 days.

6 SET JUST CLOCK

The default setting is "ON". Set as desired by pressing △▽, then press **OK** or ▷.

- For the Just clock function, ☞ "Just Clock" on the left.
- If you set to "OFF", you can disregard the next step as you won't be able to receive regular clock adjustments.

7 SET CLOCK DATA SOURCE PRESET

The recorder is preset to receive clock setting and adjustment data from preset position 1. Press △▽ to set the preset position to the number representing the station transmitting clock setting data (BBC1, BBC2, etc.), then press **OK** or ▷.

8 START CLOCK OPERATION

Press **MENU**.

Questions And Answers

PLAYBACK

Q. What happens if the end of the tape is reached during playback or search?
A. The tape is automatically rewound to the beginning.

……

Q. Can the video recorder indefinitely remain in the still mode?
A. No. It stops automatically after 5 minutes to protect the heads.

……

Q. During search, slow, still and frame-by-frame playback, I can't hear any audio. What's the problem?
A. This is normal.

……

Q. When returning from multi-speed search to normal playback, the picture is disturbed. Should I be concerned about this?
A. No, it is normal.

……

Q. Noise bars appear during multi-speed search. What's the problem?
A. This is normal.

……

Q. Sometimes, during Index Search, the video recorder can't find the programme I want to see. Why not?
A. There may be index codes too close together.

……

RECORDING

Q. When I pause and then resume a recording, the end of the recording before the pause is overlapped by the beginning of the continuation of recording. Why does this happen?
A. This is normal. It reduces distortion at the pause and resume points.

……

Q. Can the video recorder indefinitely remain in the Record-Pause mode?
A. No. The video recorder shuts off automatically after 5 minutes to protect the heads.

……

Q. What happens if the tape runs out during recording?
A. The video recorder automatically rewinds it to the beginning or, if Timer Recording, the cassette is ejected.

……

TIMER RECORDING

Q. "◌" and "◴" remain lit on the display panel. Is there a problem?
A. No. This is a normal condition for a timer recording in progress.

……

Q. Can I programme the timer while I'm watching a tape or a TV broadcast?
A. You won't see the picture as it is replaced by the on-screen menu, but the audio from the program or tape you're viewing can be heard.

……

ATTENTION
This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the recorder off and unplug the mains power cord. Then plug it in again and turn the recorder on. Take out the cassette. After checking the cassette, operate the unit as usual.

Troubleshooting

Before requesting service for a problem, use this chart to see if you can correct the trouble yourself. Small problems are often easily corrected, and this can save you the trouble of sending your video recorder off for repair.

POWER

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. No power is applied to the recorder.	• The mains power cord is disconnected.	Connect the mains power cord.
2. The clock is functioning properly, but the recorder cannot be powered.	• "◴" is displayed on the display panel with Auto Timer set to "OFF".	Press the ◴ button to turn the "◴" indicator off.
3. The remote control won't function.	• The batteries are discharged.	Replace the dead batteries with new ones.

TAPE TRANSPORT

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The tape does not run during recording.	• "⬚" is displayed on the display panel.	Press **PLAY** to turn the "⬚" indicator off.
2. The tape will not rewind or fast-forward.	• The tape is already fully rewound or fast-forwarded.	Check the cassette.

PLAYBACK

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The playback picture does not appear while the tape is running.	• If you're using the RF connection . . . . . . the TV receiver's channel selector is not set to the VIDEO channel. . . . the recorder's VIDEO channel has not been correctly set. • If you're using the AV or S-VIDEO connection, the TV receiver is not set to the AV mode.	If you are using the RF connection . . . . . . set the TV receiver to the VIDEO channel. (☞ pg. 8) . . . Perform "Video Channel Set" (☞ pg. 46) If you are using the AV or S-VIDEO connection, set the TV to its AV mode.
2. Noise appears during visual search.	• This is normal.	
3. Noise appears during normal playback.	• The automatic tracking mode is engaged.	Try manual tracking (☞ pg. 24).
4. The playback picture is blurred or interrupted while TV broadcasts are clear or "USE CLEANING CASSETTE" message appears on the screen.	• The video heads may be dirty.	Use a dry cleaning cassette JVC TCL-2U or consult your JVC dealer.
5. Breaks are noticeable in Hi-Fi soundtrack.	• Automatic tracking is engaged.	Engage and adjust tracking manually (☞ pg. 24) or press AUDIO to change the soundtrack to "NORM" (☞ pg. 25).

RECORDING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Recording cannot be started.	• There is no cassette loaded, or the cassette loaded has had its Record Safety tab removed.	Insert a cassette, or using adhesive tape, reseal the slot where the tab was removed.
2. TV broadcasts cannot be recorded.	• "L-1", "L-2", "SAT", "F-1" or "S-1" has been selected as the input mode.	Set to the desired preset.

3. Tape-to-tape editing is not possible.	• The source (another video recorder, camcorder) has not been properly connected. • All necessary power switches have not been turned on. • The input mode is not correct.	Confirm that the source is properly connected. Confirm that all units' power switches are turned on. Set the input mode to "L-1","L-2", "F-1" or "S-1".
4. Camcorder recording is not possible.	• The camcorder has not been properly connected. • The input mode is not correct.	Confirm that the camcorder is properly connected. Set the input mode to "L-1","L-2", "F-1" or "S-1".

TIMER RECORDING

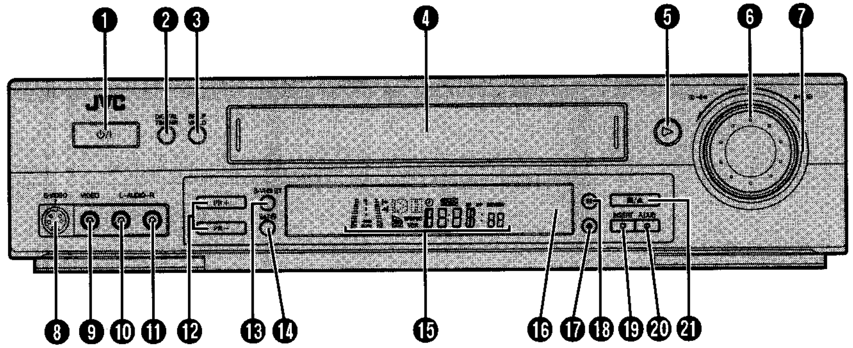
SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Timer recording won't work.	• The clock and/or the timer have been set incorrectly. • The timer is not engaged.	Re-perform the clock and/or timer settings. Press ⊕ and confirm that "⊕" is displayed on the display panel.
2. Timer programming is not possible.	• Timer recording is in progress.	Timer programming can't be performed while a timer recording is in progress. Wait until it finishes.
3. "⊕" and "▣" on the display panel won't stop blinking.	• The timer is engaged but there's no cassette loaded.	Load a cassette with the Record Safety tab intact, or cover the hole using adhesive tape.
4. The cassette is automatically ejected, and "⊕" and "▣" on the display panel won't stop blinking.	• The loaded cassette has had its Record Safety tab removed.	Remove the cassette and cover the hole with adhesive tape, or insert a cassette with the Record Safety tab intact.
5. "⊕" blinks for 10 seconds and the Timer mode is disengaged.	• ⊕ has been pressed when there are no programs in memory, or the timer record information has been programmed incorrectly.	Check the programmed data and re-programme as necessary, then press ⊕ again.
6. The cassette is automatically ejected, the power shuts off and "⊕" and "▣" won't stop blinking.	• The end of the tape was reached during timer recording.	The programme may not have been recorded in its entirety. Next time make sure you have enough time on the tape to record the entire programme.
7. The VIDEO Plus+ system does not timer-record properly.	• The recorder's preset positions have been set incorrectly.	Refer to "Guide Program Number Set" and re-perform the procedure (☞ pg. 45).

OTHER PROBLEMS

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Whistling or howling is heard from the TV during camcorder recording.	• The camcorder's microphone is too close to the TV. • The TV's volume is too high.	Position the camcorder so its microphone is away from the TV. Turn the TV's volume down.
2. When scanning channels, some of them are skipped over.	• Those channels have been designated to be skipped.	If you need the skipped channels, restore them (☞ pg. 50).
3. The preset cannot be changed.	• Recording is in progress.	Press **PAUSE** to pause the recording, change presets, then press **PLAY** to resume recording.
4. Channel settings that were made manually seem to have changed or disappeared.	• After the manual settings were made, Auto Channel Set was performed.	Perform manual setting again.
5. No channels are stored in the recorder's memory.	• The TV aerial cable was not connected to the recorder when Auto Set Up was performed. • The fully-wired 21-pin SCART cable was not connected between TV and the recorder when Preset Download was performed.	Turn off the recorder once and connect the TV aerial cable to the recorder properly, then turn on the recorder again. The recorder will try Auto Set Up again (☞ pg. 8). Turn off the recorder once and connect the fully-wired 21-pin SCART cable to the recorder properly, then turn on the recorder again. Then perform Preset Download again (☞ pg. 9).

Index

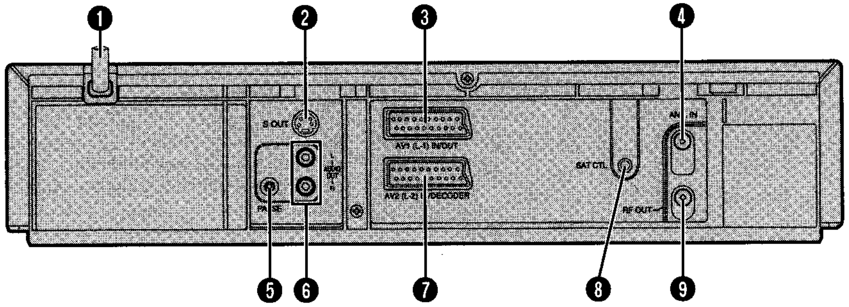
FRONT VIEW



* *Attach the provided connector cover when you do not use the front panel connectors.*

❶ **STANDBY/ON ⏻/I Button** turns recorder on/off (loading a cassette also turns power on).
❷ **DIGITAL TBC/NR Button** enables/disables Digital TBC/NR. ☞ pg. 24
❸ **SP/LP Button** selects tape speed. ☞ pg. 16
❹ **Cassette Loading Slot** is where cassette is inserted; door closes, "cassette loaded" indicator lights up on front display panel.
❺ **PLAY Button** plays back tape ☞ pg. 14; cancels Pause, Still, Slow, Search modes. ☞ pg. 15
❻ **JOG Dial** plays back frame by frame during Still or Play mode. ☞ pg. 15
❼ **SHUTTLE Ring** rewinds or fast-forwards tape during Stop mode ☞ pg. 14; performs forward and reverse slow-motion and search during Still or Play mode. ☞ pg. 15
❽ **S-VIDEO Input Connector** enables S-VIDEO connection to camcorder or second recorder. ☞ pg. 33
❾ **VIDEO Input Connector** enables easy connection of video output from another recorder or camcorder for editing. ☞ pg. 33
❿ **AUDIO Input Connector [L]** enables easy connection of audio output (mono) from another recorder, camcorder or other source for editing. ☞ pg. 33
⓫ **AUDIO Input Connector [R]** enables easy connection of audio output (Hi-Fi) from another recorder, camcorder or other source for editing. ☞ pg. 33
⓬ **PR +/– Buttons** select a preset position. ☞ pg. 16
⓭ **S-VHS ET Button** enables/disables S-VHS ET mode; lights up during S-VHS ET mode. ☞ pg. 27
⓮ **SAT⊕ Button** enables/disables the Auto Satellite Prog Rec mode; lights up during Auto Satellite Prog Rec mode; blinks while Auto Satellite Prog recording is in progress. ☞ pg. 31
⓯ **Display Panel** provides clear view of various displays and indicators. ☞ pg. 61
⓰ **Infrared Beam Receiving Window** is where remote control should be aimed when in use.
⓱ **RECORD Button** starts regular recording (press once), Instant Timer Recording (press twice); sets duration of ITR. ☞ pg. 16, 17
⓲ **PAUSE Button** stops tape temporarily during recording ☞ pg. 16; stops tape temporarily during playback; plays back frame by frame with each additional press. ☞ pg. 15
⓳ **INSERT Button** engages Insert Editing mode. ☞ pg. 39
⓴ **A. DUB Button** engages Audio Dubbing mode. ☞ pg. 37
㉑ **STOP/EJECT Button** stops tape; ejects tape during Stop mode. ☞ pg. 14

REAR VIEW



① **Mains Power Cord** supplies power to recorder. ☞ pg. 6

② **S OUT Connector** enables S-VIDEO connection to TV or second recorder. ☞ pg. 7, 34

③ **AV1 (L-1) IN/OUT Connector** enables AV connection to TV or second recorder; input recordable when "L-1" selected. ☞ pg. 6, 34

④ **ANT. IN Connector** enables connection of aerial. ☞ pg. 6

⑤ **Remote PAUSE Connector** enables connection to second recorder equipped with R.A. Edit connector, or to JVC camcorder equipped with Master Edit Control, for easy editing. ☞ pg. 33

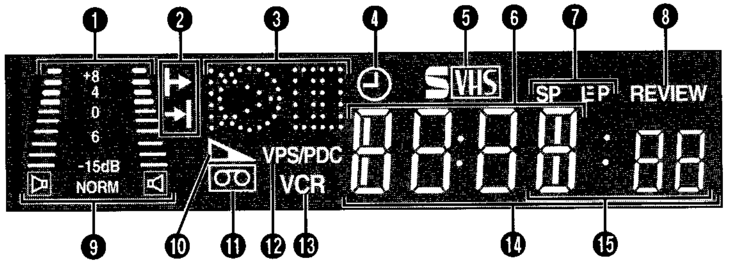
⑥ **AUDIO OUT (L/R) Connectors** enable connection of audio cassette recorder, TV or second video recorder for dubbing. ☞ pg. 44

⑦ **AV2 (L-2) IN/DECODER Connector** enables connection of satellite receiver, decoder or second recorder; input recordable when "L-2" selected. ☞ pg. 30, 34

⑧ **SAT CTL Connector** enables connection of the provided Satellite Controller for timer recording with a satellite receiver. ☞ pg. 12

⑨ **RF OUT Connector** enables connection to aerial terminal of TV receiver. ☞ pg. 6

DISPLAY PANEL



① **B.E.S.T. Picture System Display** lights from bottom to top while B.E.S.T. is active. ☞ pg. 28
Audio Level Indicator displays audio input and output levels.

② **Programme Time Indicators** show the programme start time (↦) and the programme stop time (→|) for timer-recording. ☞ pg. 20

③ **Symbolic Mode Indicators**

PLAY: FF/REW VARIABLE SEARCH:	▷	STILL: SLOW:	▷▥
		RECORD:	○
		RECORD PAUSE:	○▥
AUDIO DUBBING:			☼
AUDIO DUBBING PAUSE:			☼▥
INSERT:			◌
INSERT PAUSE:			◌▥
AV INSERT:			☼
AV INSERT PAUSE:			☼▥

④ **"Timer" Indicator** lights when ⊕ has been pressed to engage Timer mode. ☞ pg. 19, 21

⑤ **S-VHS Indicator** lights when a cassette marked S-VHS is inserted with S-VHS mode set to "ON", when an S-VHS-recorded tape or S-VHS ET-recorded tape is played back, or when S-VHS ET mode is engaged. ☞ pg. 27

⑥ **Channel Display** shows preset position where the station currently being received is stored.
Clock Display shows current time. ☞ pg. 10

⑦ **Tape Speed Indicators** display mode of recording; light during Record or Play mode. ☞ pg. 16
** EP is only for NTSC playback.*

⑧ **Instant REVIEW Indicator** blinks after timer-recording and shows how many programmes have been timer-recorded. ☞ pg. 26

⑨ **Audio Mode Indicator** displays audio output mode currently selected. ☞ pg. 25

⑩ **Tape Remaining Time Indicator** displays time remaining on tape when certain buttons are pressed. ☞ pg. 17

⑪ **"Cassette Loaded" Mark** lights once a cassette is inserted; remains lit until cassette ejected.

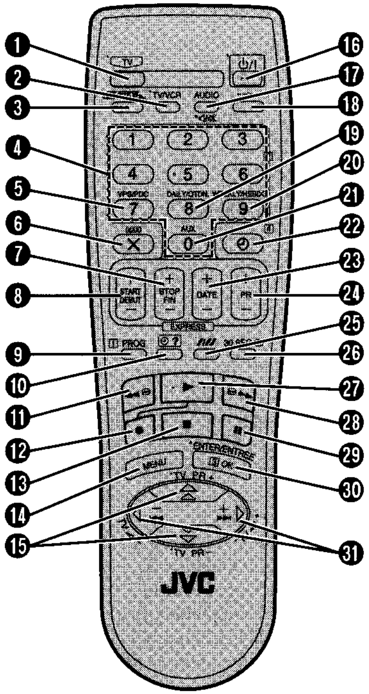
⑫ **PDC Indicator** lights when PDC has been engaged for timer recording. ☞ pg. 19, 21
** VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.*

⑬ **VCR Indicator** lights when the video recorder is in the video mode. At this point, the TV automatically enters AV mode. ☞ pg. 14

⑭ **Counter** shows time elapsed since playback or recording began.
With ◺ displayed, shows time remaining from current tape position to end of tape (☞ pg. 17). Counter, Preset Position*, Clock and Tape Remaining Time Display appear alternately when – –:– – (**Display**) is pressed.
** Preset Position is not displayed during playback.*

⑮ **Mode** shows external input mode selected (L-1, L-2, SAT*, F-1 or S-1).
** When "L-2 SELECT" is set to "SAT" (☞ pg. 36), "SAT" appears instead of "L-2".*

REMOTE CONTROL



Buttons with a small dot on the left side of the name can also be used to operate your JVC TV while holding down the **TV** button.
☞ "Operating JVC TVs" on page 63.

This remote control transmits A code signals only; it is not applicable to B code signals.

① **TV Button** enables remote control of connected TV. ☞ "Operating JVC TVs" on page 63

② **TV/VCR Button** switches connected TV's mode between TV and AV. ☞ pg. 14 and "Operating JVC TVs" on page 63

③ **REVIEW Button** "reviews" timer-recorded programme. ☞ pg. 26

④ **NUMBER Keys** are used in preset position selection ☞ pg. 16, VIDEO Plus+ timer programming ☞ pg. 18.

⑤ **PDC Button** enables/disables PDC recording. ☞ pg. 19, 21

** VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.*

⑥ X **Button** cancels timer-programme. ☞ pg. 22
0000 Button resets counter to 0:00:00. ☞ pg. 17

⑦ **STOP +/– Button** inputs programme Stop Time. ☞ pg. 20

⑧ **START +/– Button** accesses Regular Program screen; inputs programme Start Time. ☞ pg. 20

⑨ **PROG Button** accesses VIDEO Plus+ Program screen. ☞ pg. 18

⑩ ⊕ **? Button** accesses Program screens/displays to check the programme that you have programmed (next programme's information screen/display appears each time button is pressed). ☞ pg. 22

⑪ **Rewind [REW] Button** rewinds tape ; initiates reverse high-speed search. ☞ pg. 14, 15

⑫ **Record Button** — same as button on recorder. ☞ pg. 16, 17

⑬ **Stop Button** — same as button on recorder. ☞ pg. 14

⑭ **MENU Button** accesses Menu screen. ☞ pg. 11

⑮ △▽ **Button** is used for selection in on-screen menus. ☞ pg. 11
TV PR +/– selects the connected TV's/ satellite receiver's channel. ☞ "Operating JVC TVs" on page 63

⑯ **STANDBY/ON** ⏻/I **Button** — same as button on recorder.

⑰ **AUDIO Button** changes output sound mode. ☞ pg. 25
🔇 (TV Muting) Button mutes sound of connected TV. ☞ "Operating JVC TVs" in the right column.

⑱ **– –:– – (Display) Button** switches display between clock time, tape remaining time, counter readings and preset position*. ☞ pg. 17

** Preset position is not displayed during playback.*

⑲ **DAILY Button** enables timer recording of daily serials. ☞ pg. 19, 21

⑳ **WEEKLY Button** enables timer recording of weekly serials. ☞ pg. 19, 21

㉑ **AUX Button** selects recorder's auxiliary input mode. ☞ pg. 33, 34

㉒ ⊕ **(TIMER) Button** engages timer-standby mode. ☞ pg. 19, 21

㉓ **DATE +/– Button** inputs date of programme for timer recording. ☞ pg. 20

㉔ **PR +/– Button** — same as button on recorder. ☞ pg. 16

㉕ **Auto Tracking Button (///)** enables/disables auto tracking mode during playback ☞ pg. 24
SP/LP Button selects tape speed. ☞ pg. 16

㉖ **30 SEC Button** initiates a 30-second period of fast-motion playback. ☞ pg. 26

㉗ **Play Button** — same as button on recorder. ☞ pg. 14, 15

㉘ **Fast Forward [FF] Button** fast-forwards tape; initiates forward high-speed search. ☞ pg. 14, 15

㉙ **Pause Button** — same as button on recorder. ☞ pg. 15, 16

㉚ **OK Button** enters selections made in on-screen menus. ☞ pg. 11

㉛ ◁▷ **Button** initiates functions such as Index Search ☞ pg. 26, variable-speed search, frame by frame playback. ☞ pg. 15
TV ◿ +/– Button controls volume of connected TV. ☞ "Operating JVC TVs" in the right column.

How To Use

The remote control can operate most of your video recorder's functions, as well as basic functions of JVC TV sets. (See below.)

- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

Operating JVC TVs

To operate your TV, while holding down the **TV** button, press the corresponding button: **STANDBY/ON** ⏻/I, **TV/VCR**, **TV PR +/–**, **TV** ◿ **+/–**, 🔇 (TV Muting).

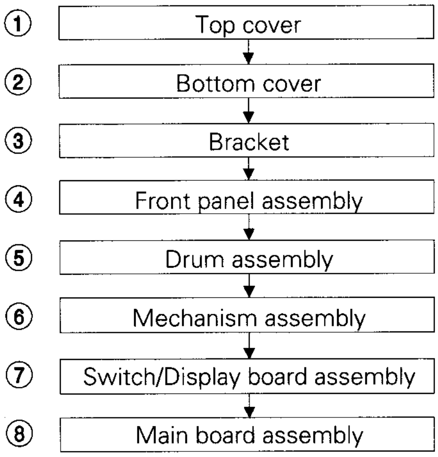
NOTES:

- *When inserting the batteries, be sure to insert in the correct directions as indicated under the battery cover.*
- *Depending on the type of JVC TV, there may be cases where some or all functions cannot be operated using the remote control.*
- *If the remote control doesn't work properly, remove its batteries, wait a short time, replace the batteries and then try again.*

SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	Top cover	D1	4(S1a),(S1b)	
②	Bottom cover	D2	(S2a),2(S2b), 4(L2a), 3(L2b) EARTH PLATE	<NOTE 2>
③	Bracket	D3	2(S3)	

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) NO. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig.No. showing procedure or part location
(4) Identification of part to be removed,unhooked,unlocked, released,unpluged,unclamped or unsoldered.
P = Spring, W = Washer, S = Screw, L = Locking tab, CNxx(WRxx) = Remove the wire (WRxx) from the connector (CNxx).

NOTE: *The bracketed ( ) WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.*

(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	Top cover	D1	4(S1a),(S1b)	
②	Bottom cover	D2	(S2a),2(S2b), 4(L2a), 3(L2b) EARTH PLATE	<NOTE 2>
③	Bracket	D3	2(S3)	
④	Front panel assembly	D4	7(L4), CN901(WR4a), CN7002(WR4b) [HR-S6700EK/EU] CN3012(WR4b) [HR-S7700EK/EU] (S4a), Jack board assy 3(S4b), Jog board assy	<NOTE 4a> <NOTE 4b> <NOTE 4c>
⑤	Drum assembly	D5	3(S5), 4(L5a), (L5b), (P5), CON1(WR5a), CN1(WR5b) Inertia plate, Roller arm assy	<NOTE 4a>
⑥	Mechanism assembly	D6	2(S6a), (S6b), (S6c), 2(L6), CN1(WR6)	<NOTE 4a> <NOTE 6a> <NOTE 6b>
⑦	Switch/Display board assembly	D7	CN7001(WR7a), CN7191(WR7b), (L7a), Rec safety board assy, 2(L7b), 5(L7c)	<NOTE 4a> <NOTE 7>
⑧	Main board assembly	D8	2(S8), (L8)	

<NOTE2>
- When attaching the Bottom cover, make sure that the earth plate of the Bottom cover is passed through the hole of the Bottom chassis and then touches the GND (Ground) on the Main board assembly.

<NOTE4a>
- Be careful not to damage the connector and wire etc. during connection and disconnection.
When connecting the wire to the connector, be careful with the wire direction.

<NOTE4b>
- When reattaching the Front panel assembly, make sure that the door opener ⓐ of the Cassette holder assembly is lowered in position prior to the reinstallation.

<NOTE4c>
- The Jog board assembly can be removed from the front panel rear by pulling it gently toward the front after the screw (S4b) is removed.

<NOTE6a>
- When it is required to remove the screws (S6a) retaining the Mechanism assembly, please refer to the "Procedures for Lowering the Cassette holder assembly"(See on pages 1-2).
- When removing the Mechanism assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Mechanism assembly.
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors on the Main board assembly (D3001: LED, Q3002: Start sensor, Q3003: End sensor, S3002 : S cassette switch).

<NOTE6b>
- The wire (WR6) has excess length that may be loose, as it is quite long. After inserting the wire and connectors, the loose portion of the wire should be taken up and accommodated between the A/C head base and the main deck.

<NOTE7>
- The REC safety board assembly is attached to the Switch/Display board assembly. It is therefore necessary to remove the REC safety board assembly before removing the Switch/Display board assembly.

Procedures for Lowering the Cassette holder assembly

As the mechanism of this unit is integrated with the Housing assembly, the holder must be lowered and the two screws unscrewed when removing the Mechanism assembly.

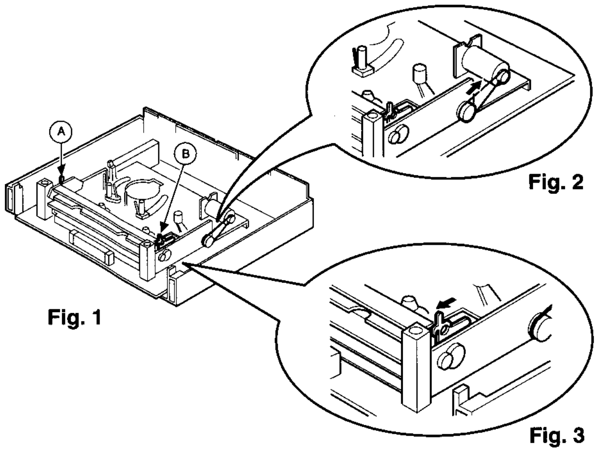


Fig. 2

Fig. 1

Fig. 3

Turn the loading motor pulley in the direction as indicated by Fig.2. As both Ⓐ and Ⓑ levers are lodged twice, push the levers in the direction as indicated by Fig.3 to release them. When pushing the levers, do it in the order of Ⓐ, Ⓑ, Ⓑ, Ⓐ. When the holder has been lowered, turn the pulley until the cassette holder is securely in place without allowing any up/down movement.

Procedures for Lowering the Cassette holder assembly

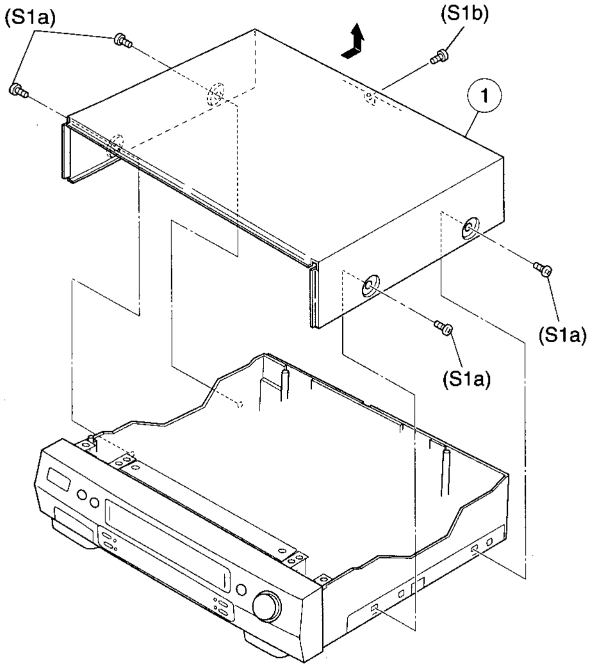


Fig. D1

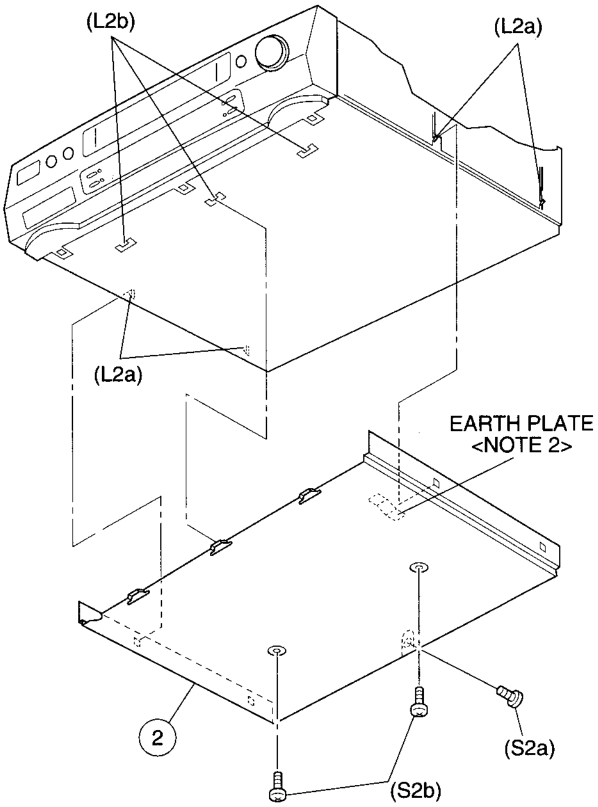


Fig. D2

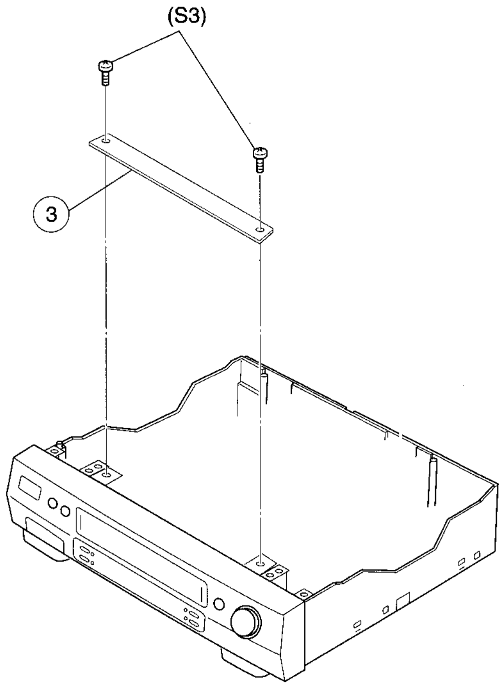


Fig. D3

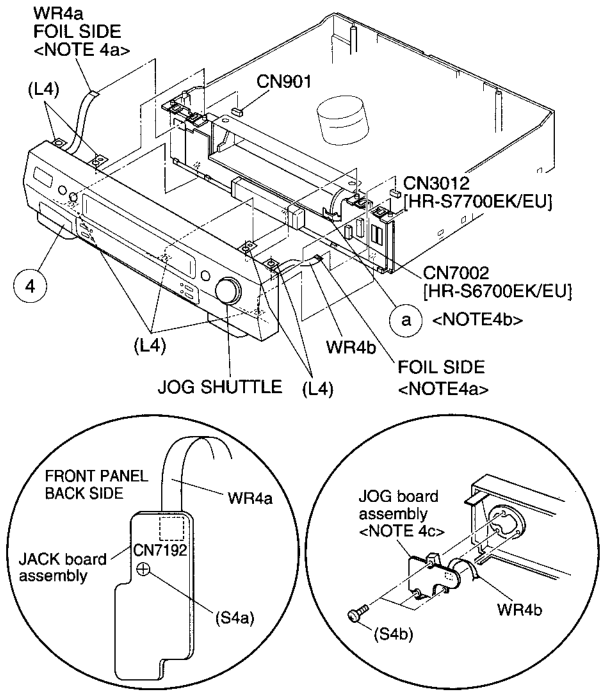

WR4a
FOIL SIDE
<NOTE 4a>
(L4)
CN901
CN3012
[HR-S7700EK/EU]
CN7002
[HR-S6700EK/EU]
a
<NOTE4b>
4
(L4)
WR4b
FOIL SIDE
<NOTE4a>
JOG SHUTTLE
(L4)
FRONT PANEL
BACK SIDE
WR4a
JACK board
assembly
CN7192
(S4a)
JOG board
assembly
<NOTE 4c>
WR4b
(S4b)

Fig. D4

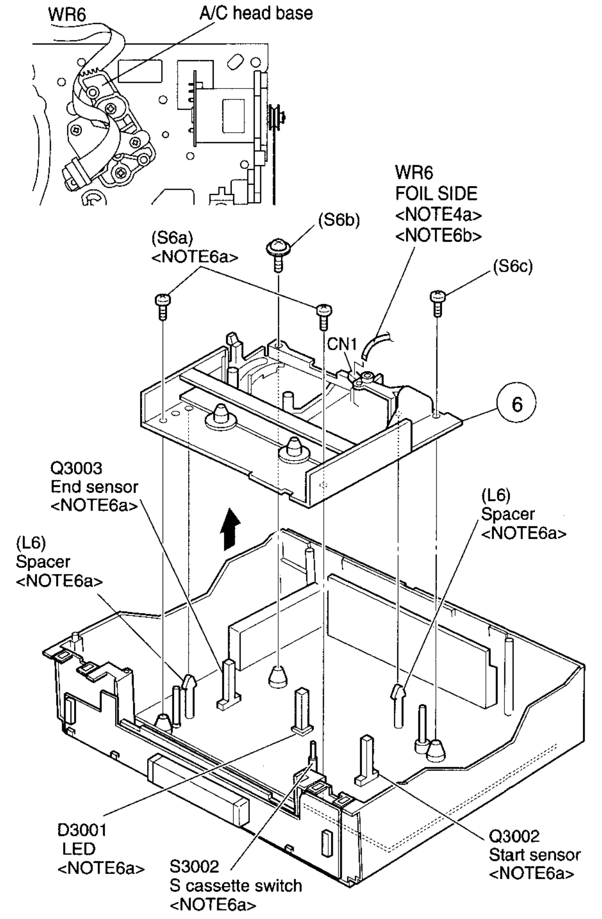

WR6
A/C head base
WR6
FOIL SIDE
<NOTE4a>
<NOTE6b>
(S6b)
(S6a)
<NOTE6a>
(S6c)
CN1
6
Q3003
End sensor
<NOTE6a>
(L6)
Spacer
<NOTE6a>
(L6)
Spacer
<NOTE6a>
D3001
LED
<NOTE6a>
S3002
S cassette switch
<NOTE6a>
Q3002
Start sensor
<NOTE6a>

Fig. D6

NOTE: When installing the DRUM assembly, secure the screws (S5) in the order of ⓐ, ⓑ, ⓒ.

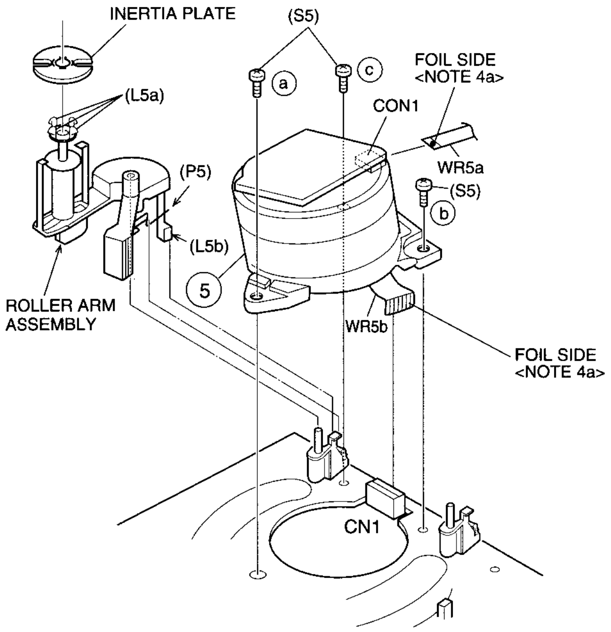

INERTIA PLATE
(S5)
a
c
FOIL SIDE
<NOTE 4a>
(L5a)
CON1
WR5a
(P5)
(S5)
b
(L5b)
5
ROLLER ARM
ASSEMBLY
WR5b
FOIL SIDE
<NOTE 4a>
CN1

Fig. D5

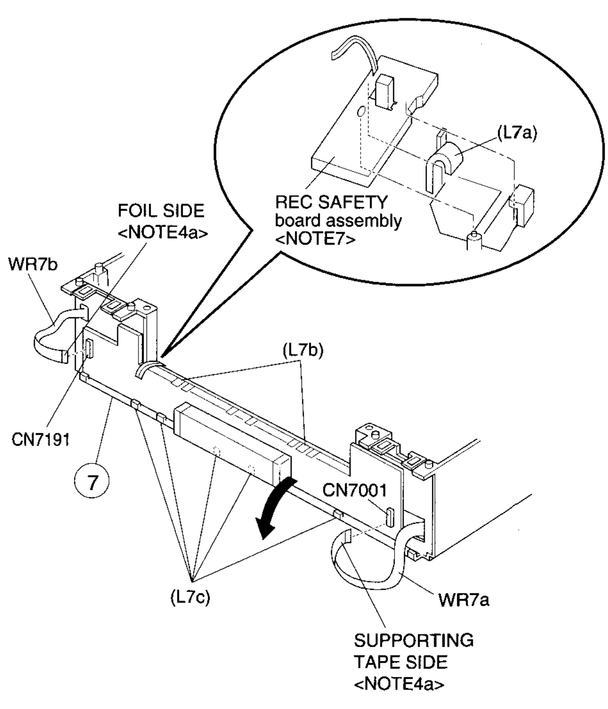

(L7a)
REC SAFETY
board assembly
<NOTE7>
FOIL SIDE
<NOTE4a>
WR7b
(L7b)
CN7191
7
CN7001
(L7c)
WR7a
SUPPORTING
TAPE SIDE
<NOTE4a>

Fig. D7

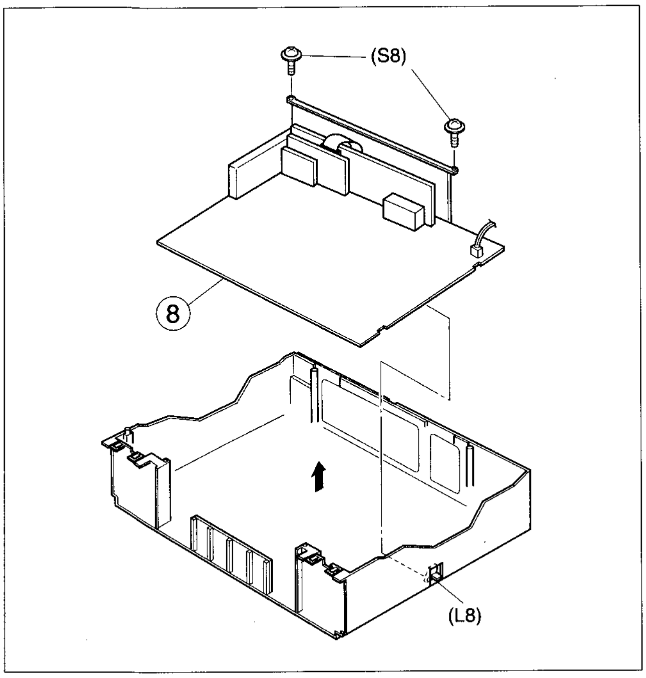


Fig. D8

1.4 SERVICE POSITION

In order to facilitate diagnosis and the repair of the Mechanism assembly, this unit is constructed so as to allow the Mechanism and Main board assemblies to be removed together from the Bottom chassis assembly.

1.4.1 How to take out the Mechanism and Main board assemblies

(1) Remove the Top cover, Bracket, Front panel assembly and JACK board assembly. (Refer to 1.3 DISASSEMBLY/ ASSEMBLY METHOD.)

(2) Lower the cassette holder, and make the preparations required in order to remove the screws from the Mechanism assembly. (Refer to the "Procedures for Lowering the Cassette holder assembly" on pages 1-2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)

(3) Take out 2 screws Ⓐ, 1 screw Ⓑ and 1 screw Ⓒ as shown in Fig. 1-4-1.

(4) Remove the flat wires from CN3011 and CN902 on the Main board assembly.

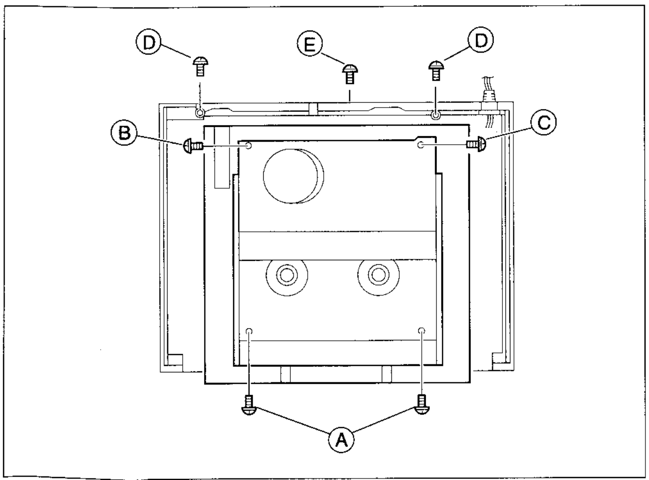


Fig. 1-4-1

(5) Take out 2 screws Ⓓ and 1 screw Ⓔ as shown in Fig. 1-4-1.

(6) Remove the hook Ⓕ while holding the edge of the Main board assembly, and remove the Main board and Mechanism assemblies together. At this stage be careful of the power cord and prongs of the jacks on the back side. (Refer to Fig. 1-4-2.)

(7) Remove the Switch/Display board assembly and REC safety board assembly. (Refer to page 1-3 of 1.3 DISASSEMBLY/ASSEMBLY METHOD. Take care not to pull the flat wires (Fig. D7) from CN7001 and CN7191.)

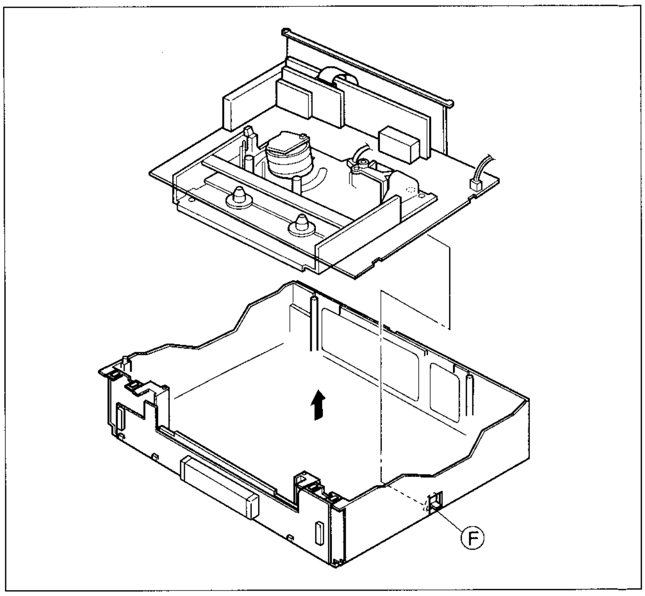


Fig. 1-4-2

(8) Place the Switch/Display board assembly, REC safety board assembly and Jack board assembly on the front side of the Mechanism and Main board assemblies which was removed at the step (6), then connect the flat wires into CN3011, CN901 and CN902 of the Main board assembly. (Refer to Fig. 1-4-3.)

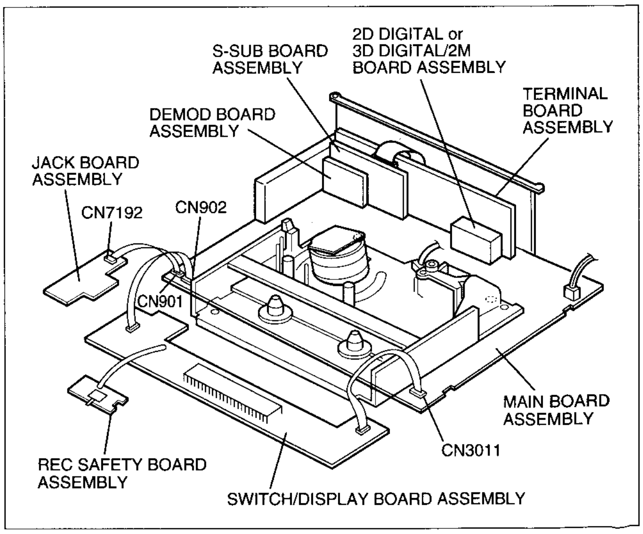

S-SUB BOARD ASSEMBLY
2D DIGITAL or 3D DIGITAL/2M BOARD ASSEMBLY
TERMINAL BOARD ASSEMBLY
DEMOD BOARD ASSEMBLY
JACK BOARD ASSEMBLY
CN7192
CN902
CN901
MAIN BOARD ASSEMBLY
CN3011
REC SAFETY BOARD ASSEMBLY
SWITCH/DISPLAY BOARD ASSEMBLY

Fig. 1-4-3

(9) Connect the power cord to the wall socket, and lift the cassette holder.
(Before turning on the power make sure that there is nothing which may produce a short circuit, such as faulty soldering.)

Note: *When carrying out diagnosis and repair of the Main board assembly in the service position, be sure to ground both the Main board and the Mechanism assemblies.*

If they are improperly grounded, there may be noise on the playback picture or the FDP counter display may move even when the mechanism is kept in an inoperative status.

1.4.2 Precautions for cassette loading in the "SERVICE POSITION"

The REC safety board assembly detects cassette loading as well as cassette tabs. Therefore, after the assembly has been removed in the "SERVICE POSITION", it is required to set the switch manually on the REC safety board assembly when a cassette is loaded.

1.4.3 Cassette loading and ejection methods in the "SERVICE POSITION"(See Fig. 1-4-3).

(1) Insert a cassette halfway in the Cassette holder assembly.
(2) Set the switch on the REC safety board assembly to ON (by pressing the switch).
(3) As soon as the cassette starts to be loaded, set the switch on the REC safety board assembly to OFF (by releasing the switch).
(4) Now the desired operation (recording, playback, fast forward, rewind, etc.) is possible in this status (the status shown in Fig.1-4-3).

NOTES:
- *When performing diagnostics of the tape playback or the recording condition in the "SERVICE POSITION", enter the desired mode before turning the set upside down, and do not change the mode when performing diagnostics while the set is placed upside down. If you want to switch the mode, turn the set to the normal position (the status shown in Fig.1-4-3).*
- *In the "SERVICE POSITION", the cassette tabs cannot be detected and recording becomes possible even with a cassette with broken tabs such as the alignment tape. Be very careful not to erase important tapes.*

(5) The switch on the REC safety board assembly does not have to be operated when ejecting a tape. But be sure to turn the set to the normal position before ejecting the tape.

1.5 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.5.1 How to set the "MECHANISM SERVICE MODE"

(1) Disconnect VCR from AC.
(2) Connect TPGND and TP7001 (TEST) on the Switch/Display board assembly with a jump wire.
(3) Connect VCR to AC.
(4) Press the POWER button.
(5) With lock levers ⒶⒷ on the left and right of the Cassette holder assembly pulled toward the front, slide the holder in the same direction as the cassette insertion direction. (For the positions of lock levers ⒶⒷ, refer to the "Procedures for Lowering the Cassette holder assembly" on pages 1-2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(6) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.

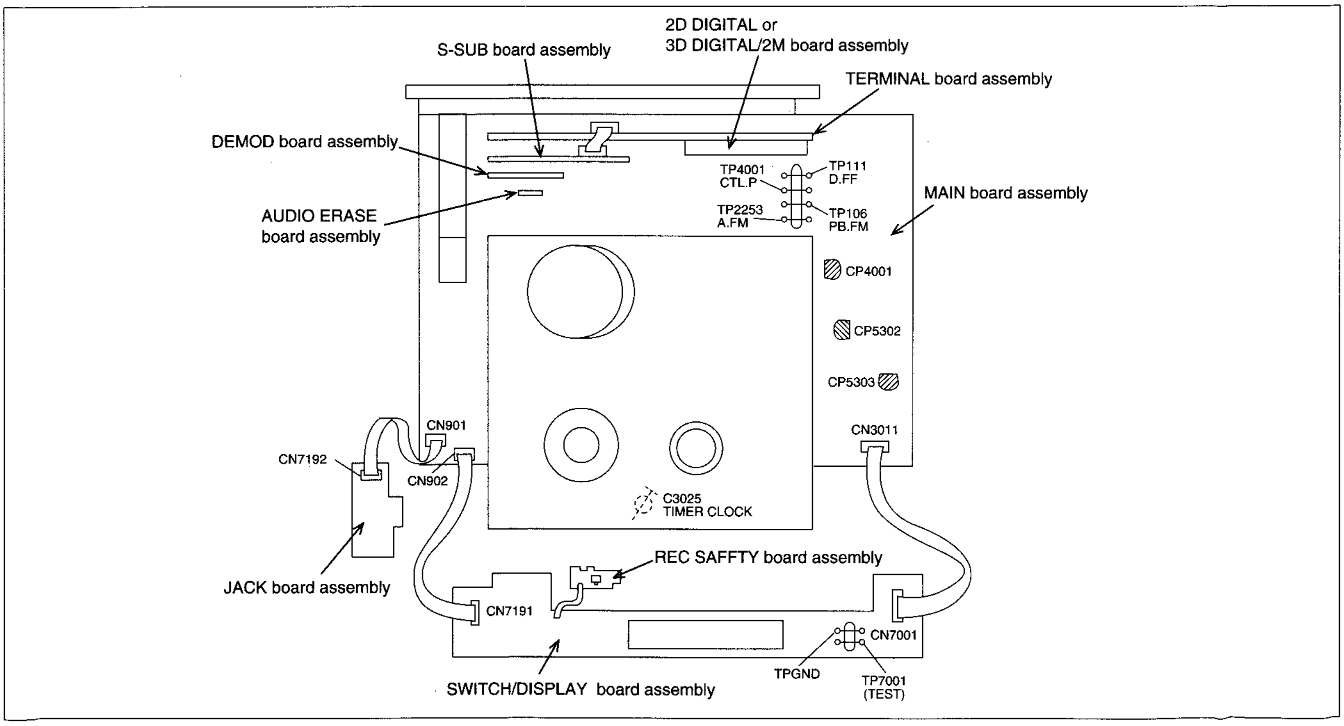

S-SUB board assembly
2D DIGITAL or
3D DIGITAL/2M board assembly
TERMINAL board assembly
DEMOD board assembly
AUDIO ERASE
board assembly
TP4001
CTL.P
TP111
D.FF
TP2253
A.FM
TP106
PB.FM
MAIN board assembly
CP4001
CP5302
CP5303
CN901
CN7192
CN902
CN3011
C3025
TIMER CLOCK
REC SAFFTY board assembly
JACK board assembly
CN7191
CN7001
TPGND
TP7001
(TEST)
SWITCH/DISPLAY board assembly

Fig. 1-5-1

1.6 EMERGENCY DISPLAY FUNCTION

This unit has a function for storing the history of the past two emergencies (EMG) and displaying them on each FDP. With the status of the VCR and mechanism at the moment an emergency occurred can also be confirmed.

FDP display switching

→ FDP display	0 : 00 : 00	Normal display
↓	E : ** : **	Emergency content display (E:Latest:Previous)
↓	*1: *2 : 34	Emergency detail display ①
↓	*5: *6 : *7	Emergency detail display ②

NOTES: • *The emergency detail display ① ② show the information on the latest emergency.*
It becomes " – – : – – : – –" when there is no latest emergency record.
• *When using the Jig RCU, set its custom code to match the custom code of the VCR.*

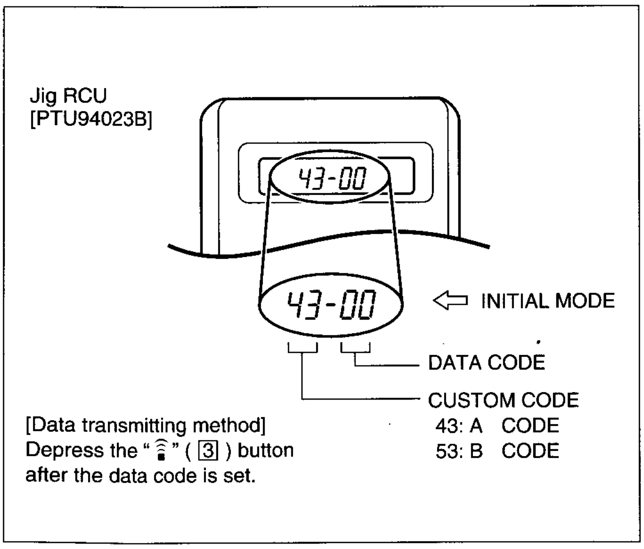


Fig. 1-6-1 Jig RCU

1.6.1 Displaying the emergency information

(1) Transmit the code "59" from the Jig RCU.
The FDP shows the emergency content in the form of "E:**:**".

Example 1 E : 01 : 03
01 — Latest emergency
03 — Previous emergency

Example 2 E : – – : – – ← No emergency record

NOTE: • *For the emergency content, see "1.6.3 Emergency content description".*

(2) Transmit the code "59" from the Jig RCU again.
The FDP shows the emergency detail information ① in the form of "*1 : *2 : 34".

*1 : Deck operation mode at the moment of emergency
*2 : Mechanism operation mode at the moment of emergency
3– : Mechanism sensor information at the moment of emergency
–4 : Mechanism mode position at the moment of emergency

NOTE: • *For the emergency detail information ①, see "1.6.4 Emergency detail information ①".*

(3) Transmit the code "59" from the Jig RCU once again.
The FDP shows the emergency detail information ② in the form of "*5 : *6 : *7".

*5 : Type of the cassette tape in use ①.
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use ② (Winding area)

NOTE: • *For the emergency detail information ②, see "1.6.5 Emergency detail information ②".*

(4) Transmit the code "59" from the Jig RCU once again to reset the display.

1.6.2 Clearing the emergency history

(1) Display the emergency history.
(2) Transmit the code "36" from the Jig RCU.
(3) Reset the emergency display.

1.6.3 Emergency content description

NOTE: *Emergency contents "E08/E09" are for the model with Dynamic Drum (DD).*

FDP	CONTENT	CAUSE
E01: Loading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the loading direction, [E:01] is identified and the power is turned off.	① The mechanism is locked in the middle of mode transition. ② The mechanism is locked at the loading end due to the encoder position reading error during mode transition. ③ Power is not supplied to the loading MDA.
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	① The mechanism is locked in the middle of mode transition. ② The mechanism is locked at the unloading end due to the encoder position reading error during mode transition. ③ Power is not supplied to the loading MDA.
E03: Take Up Reel Pulse EMG	When the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the reel EMG is not detected in STILL/SLOW modes.	① The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1) The idler gear is not meshed with the take-up reel gear; 2) The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3) The take-up reel sensor does not output the FG pulse. ② The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The supply reel sensor does not output the FG pulse. ③ Power is not supplied to the reel sensors.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	① The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. ② The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. ③ The drum control voltage (DRUM CTL V) is not supplied to the MDA. ④ Power is not supplied to the drum MDA.
E05: Cassette Eject EMG	When the eject operation does not complete in 3 seconds after the start, [E:05] is identified, the pinch rollers are turned off and stopped, and the power is turned off. When the cassette insertion operation does not complete in 3 seconds after the start, the cassette is ejected. In addition, when the operation does not complete within 3 seconds after the start, [E:05] is also identified and the power is turned off immediately.	① The cassette cannot be ejected due to a failure in the drive mechanism of the housing. ② When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. ③ The sensor/switch for detecting the end of ejection are not functioning normally. ④ The loading motor drive voltage is lower than specified or power is not supplied to the motor (MDA). ⑤ When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off.However, the capstan EMG is not detected in STILL/SLOW/FF/REW modes.	① The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). ② The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. ③ The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. ④ Power is not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	① The SW 5 V power supply circuit is shorted with GND. ② The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	① The absolute value sensor is defective. (The soldered parts have separated.) ② The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) ③ Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. ④ The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	① The FG sensor is defective. (The soldered parts have separated.) ② The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) ③ Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. ④ The power to the sensor is not supplied. (Connection failure/soldering failure) ⑤ The FG pulse is not sent to the System Controller CPU. ⑥ The tilt motor is defective. (The soldered parts have separated.) ⑦ The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) ⑧ The tilt motor drive MDA - IC is defective. ⑨ Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). However, note that the reel EMG is not detected in the SLOW/STILL mode.	① The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The FG pulse output from the supply reel sensor is absent. ② The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The FG pulse output from the take-up reel sensor is absent. ③ The power to a reel sensor is not supplied.
EU1: Head clog warning	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:U1] is identified and recorded in the emergency history. During the period in which a head clog is detected, the FDP and OSD repeat the "3-second warning display" and "7-second noise picture display" alternately. EMG code : "E:U1" / FDP : "U:01" / OSD : "Try cleaning tape." The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

Table 1-6-1

1.6.4 Emergency detail information ①

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest emergency can be confirmed based on the figure in EMG detail information ①.

[FDP display]

*1 : *2 : 34

*1 : Deck operation mode at the moment of emergency

*2 : Mechanism operation mode at the moment of emergency

3– : Mechanism sensor information at the moment of emergency

–4 : Mechanism mode position at the moment of emergency

***1 : Deck Operation Mode**

Display	Deck Operation Mode
00	STOP with pinch roller pressure off (or tape present with P.OFF)
01	STOP with pinch roller pressure on
04	PLAY
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH (variable speed)
4C	AUDIO DUB
6E	INSERT REC (VIDEO+AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO+AUDIO) PAUSE

3– : Mechanism Sensor Information

Display	Mechanism Sensor Information			
	S-VHS SW	REC SAFETY SW	START SENSOR	END SENSOR
0–	VHS	Tab broken	ON	ON
1–	VHS	Tab broken	ON	OFF
2–	VHS	Tab broken	OFF	ON
3–	VHS	Tab broken	OFF	OFF
4–	VHS	Tab present	ON	ON
5–	VHS	Tab present	ON	OFF
6–	VHS	Tab present	OFF	ON
7–	VHS	Tab present	OFF	OFF
8–	S-VHS	Tab broken	ON	ON
9–	S-VHS	Tab broken	ON	OFF
A–	S-VHS	Tab broken	OFF	ON
B–	S-VHS	Tab broken	OFF	OFF
C–	S-VHS	Tab present	ON	ON
D–	S-VHS	Tab present	ON	OFF
E–	S-VHS	Tab present	OFF	ON
F–	S-VHS	Tab present	OFF	OFF

***2 : Mechanism Operation Mode**

Display	Mechanism Operation Mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)

–4 : Mechanism Mode Position

Display	Mechanism Mode Position
–0	EJECT position
–1	U/L STOP position
–2	Tape being loaded/unloaded (When the pole base is located on the rear side of the position just beside the drum)
–3	FF/REW position
–4	STOP with pinch roller pressure off
–5	REV (REV STILL/SLOW) position
–6	FWD (FWD STILL/SLOW) position, PLAY position
–7	Intermediate position during transition between other mechanism modes

NOTE: • *As the display is always "–7" at any intermediate position between mechanism modes, the position of transitory EMG may sometimes not be locatable.*

1.6.5 Emergency detail information ②

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information ②.

[FDP display]

*5 : *6 : *7

*5 : Type of the cassette tape in use ①
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use ② (Winding area)

NOTE: • *EMG detail information ② is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.*

***5 : Cassette tape type ①**

Display	Cassette Tape Type ①
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified /thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified /thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

NOTES: • *Cassette tape type ① is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.*

• *If other value than those listed in the above table is displayed, the cassette tape type is not identified.*

***6 : Cassette tape winding position**

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 22 sections using a hex number from "00" to "15".

"00" : End of winding
"15" : Beginning of winding
"FF" : Tape position not identified

***7 : Cassette tape type ② (Winding area)**

Display	Cassette Tape Type ②	
00	Cassette type not identified	
07	Small reel, thick tape	T-5
08 - 0E	C cassette, thick tape	TC-10
09 - 15	C cassette, thick tape	TC-20P
0A - 0B	Small reel, thick tape	T-20
0A - 16	C cassette, thin tape	TC-30
0A - 16	C cassette, thin tape	TC-40
0D - 0F	Small reel, thick tape	T-40
11 - 14	Small reel, thick tape	T-60
15 - 18	Small reel, thick tape	T-80/DF-160
17 - 1A	Small reel, thick tape	T-80/DF-180
19 - 1D	Small reel, thick tape	T-100
1D - 21	Small reel, thick tape	T-120/DF-240
1E - 1F	Small reel, thin tape	T-140
1F - 23	Small reel, thick tape	T-130
21 - 23	Small reel, thin tape	T-160
21 - 23	Small reel, thin tape	T-168
22 - 24	Small reel, thick tape	DF-300
22 - 24	Small reel, thin tape	T-180/DF-380
22 - 24	Small reel, thin tape	T-210/DF-420
22 - 23	Large reel	T-5
23 - 24	Large reel	T-10
25 - 26	Large reel	T-20
27 - 29	Large reel	T-30
29 - 2B	Large reel	T-40
2D - 2F	Large reel	T-60

NOTE: • *The values of cassette tape type ② in the above table are typical values with representative cassette tapes.*

1.7 SYSCON CIRCUIT

1.7.1 Syscon CPU pin function (IC3001) 1/2

PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL(+)	IN/OUT	CTL(+) SIGNAL
2	SVSS	-	GND
3	CTL(-)	IN/OUT	CTL(-) SIGNAL
4	CTLBIAS	-	CTL BIAS VOLTAGE
5	CTLFB	IN	CTL PULSE FEEDBACK
6	CTLAMPOUT	OUT	CTL PULSE OUTPUT
7	CTLSMTIN	IN	CTL PULSE INPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVCC	-	SYSTEM POWER
10	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
11	NORM/MESEC/S	IN	SVHS MODE:H
12	SECAM DET/KILLER OUT	IN	NC/COLOR KILLER DETECT
13	VIDEO ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
14	START SENSOR	IN	START SENSOR
15	END SENSOR	IN	END SENSOR
16	IND(L)	IN	AUDIO INPUT (LCH) FOR THE FDP AUDIO INDICATOR
17	DD ABS	-	NC
18	SCR ID	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H)
19	IND(R)	IN	AUDIO INPUT (RCH) FOR THE FDP AUDIO INDICATOR
20	BS ANT/AFC	IN	TUNING CLOCK
21	LED/RF AGC	IN	NC/CHANGES IN ATS+IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT.
22	A.ENV/ND(L)	IN	AUDIO PB FM ENV.INPUT/NON HiFi MODE:L
23	AVSS	-	GND FOR ANALOG CIRCUIT
24	CTL GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
25	LSA	IN	MECHANISM MODE DETECT(A)
26	LSB	IN	MECHANISM MODE DETECT(B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP REV(L)	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:H/REV:L)
29	RC	IN	REMOTE CONTROL DATA INPUT
30	LOCK(L)/P.SAVE[0.1]	IN	TUNING PLL LOCK DETECT:L
31	P50 IN	IN	CONTROL SIGNAL FOR TV LINK
32	R.PAUSE/COMPU IN	IN	REMOTE PAUSE CONTROL / A/V COMPULINK INPUT [HR-S7700EK/EU]
33	RAE OUT/COMPU OUT	-	NC
34	P50 OUT	OUT	CONTROL SIGNAL FOR TV LINK
35	LMC1	OUT	LOADING MOTOR DRIVE(1)
36	LMC2	OUT	LOADING MOTOR DRIVE(2)
37	LMC3	OUT	LOADING MOTOR DRIVE(3)
38	SB G(PWM)	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	STB/TEST	OUT	STROBE SIGNAL (FOR FDP DRIVER)
40	POWER DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	REC SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
42	PROTECT	IN	DETECTION SIGNAL FOR SW POWER SUPPLY
43	VSS	-	GND
44	RMO	OUT	REMOTE CONTROL OUTPUT FOR SATELLITE RECEIVER
45	VCC	-	SYSTEM POWER
46	EXP2 DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR TUNER/REG CONTROL
47	EXP1 DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR AUDIO/VIDEO CONTROL
48	EXP CLK	OUT	SERIAL DATA TRANSFER CLOCK FOR AUDIO/VIDEO AND TUNER/REG CONTROL
49	I2C DATA A/V	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
50	I2C CLK A/V	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
51	S.DATA TOSYS	IN	SERIAL DATA TRANSFER OUTPUT FROM THE ON-SCREEN IC TO THE FDP DRIVER
52	S.DATA FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN IC
53	S.CLK	OUT	SERIAL DATA TRANSMISSION CLOCK FROM THE FDP DRIVER TO THE ON-SCREEN IC
54	SP FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
56	JUST CLK/EDS(H)	-	NC

Table 1-7-1 SYSCON CPU pin function(1/2)

1.7.2 Syscon CPU pin function (IC3001) 2/2

PIN NO.	LABEL	IN/OUT	FUNCTION
57	TU CE	OUT	CHIP ENABLE OF THE TUNER UNIT
58	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
59	DDFG	-	NC
60	TU CLK	OUT	CLOCK FOR DATA TRANSFER TO THE TUNER UNIT
61	TU DATA	OUT	TUNING DATA
62	FWE	-	NC
63	NMI(L)	-	NC
64	X2	-	TIMER CLOCK (32.768KHz)
65	X1	-	TIMER CLOCK (32.768KHz)
66	RES(L)	-	RESET TERMINAL (RESET ON:L)
67	OSC1(IN)	-	MAIN SYSTEM CLOCK(10MHz)
68	VSS	-	GND
69	OSC2(OUT)	-	MAIN SYSTEM CLOCK(10MHz)
70	VCC	-	SYSTEM POWER
71	MODE	-	NC
72	TU A MUTE(H)	OUT	TUNER AUDIO MUTE CONTROL (MUTE:H)
73	TU V MUTE(H)	OUT	TUNER VIDEO CONTROL (MUTE:H)
74	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE:H)
75	I2C CLK2	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	I2C DATA2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	DDCFWD	-	NC
78	DDCREV	-	NC
79	DDSPDCTL	-	NC
80	V.P.CTL	OUT	V.PULSE CONTROL, V COMPENSATION DURING SPECIAL PLAYBACK
81	R-Y REV/EDS CS	-	NC
82	VCC	-	SYSTEM POWER
83	SLOW P	OUT	MEMORY TIMING CONTROL IN THE SLOW MODE [HR-S7700EK/EU]
84	VSS	-	GND
85	SP SHORT(H)	OUT	MODE SELECT [HR-S6700EK/EU]
86	LP SHORT(H)	OUT	MODE SELECT [HR-S6700EK/EU]
87	FLY ON(H)	OUT	FLYING ERASE ON:H [HR-S7700EK/EU]
88	H.REC ST(H)	OUT	HIFI AUDIO SOUND RECORDING START
89	TRICK(H)/M TRICK(L)	OUT	SPECIAL PLAYBACK:H/NC [HR-S7700EK/EU]
90	HEAD SEL	OUT	HEAD SELECT(LP HEAD:H, SP HEAD:L)
91	OSD CS	OUT	CHIP SELECT FOR THE ON-SCREEN IC
92	SYNC DET(H)	IN	DETECTION OF VIDEO SYNC SIGNAL (DETECTED:H)
93	MESECAM(H)	OUT	MESECAM:H
94	JSB/STLB	IN	INPUT FOR THE JOG SHUTTLE [HR-S7700EK/EU]
95	SHTL(L)/JOGA	IN	INPUT FOR THE JOG SHUTTLE [HR-S7700EK/EU]
96	JOGB/S CASS(H)	IN	NC/DETECTION SIGNAL FOR SVHS CASSETTE (SVHS:H)
97	JSA/STLA	IN	INPUT FOR THE JOG SHUTTLE [HR-S7700EK/EU]
98	C.SYNC	IN	COMPOSITE SYNC
99	A.FF	OUT	AUDIO FF OUTPUT
100	V.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
101	CAPPWM	OUT	CAPSTAN MOTOR CONTROL
102	DRUMPWM	OUT	DRUM MOTOR CONTROL
103	SUB RESET	-	NC
104	HI FF/REW(L)	-	NC
105	SUB BUSY	-	NC
106	SUB CS	-	NC
107	DPG	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
108	DFG	IN	DRUM FG PULSE INPUT
109	VCC	-	SYSTEM POWER
110	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
111	VSS	-	GND
112	CTLREF	-	CTL REFERENCE VOLTAGE

Table 1-7-2 SYSCON CPU pin function(2/2)

SECTION 2
MECHANISM ADJUSTMENT

2.1 BEFORE STARTING REPAIR AND ADJUSTMENT

2.1.1 Precautions

(1) Unplug the power cable of the main unit before using your soldering iron.
(2) Take care not to cause any damage to the conductor wires when plugging and unplugging the connectors.
(3) Do not randomly handle the parts without identifying where the trouble is.
(4) Exercise enough care not to damage the lugs, etc. during the repair work.
(5) When installing the front panel assembly, be sure to hook the lug on the back side of the cassette door to the door opener of the cassette holder. If this operation is neglected it will not be possible to remove the cassette when ejecting because the housing door cannot be opened.

2.1.2 Checking for Proper Mechanical Operations

Enter the mechanism service mode when you want to operate the mechanism when no cassette is loaded. (See 1.5 MECHANISM SERVICE MODE.)

2.1.3 Manually Removing the Cassette Tape

1. In case of electrical failures

If you cannot remove the cassette tape which is loaded because of any electrical failure, manually remove it by taking the following steps.

(1) Unplug the power cable and remove the top cover, bracket and front panel assembly. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(2) Unload the cassette by manually turning the loading motor of the mechanism assembly toward the front. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.2-1-1.)
(3) Bring the pole base assembly (supply or take-up side) to a pause when it reaches the position where it is hidden behind the cassette tape.
(4) Move the top guide toward the drum while holding down the lug Ⓐ of the bracket retaining the top guide. Likewise hold part Ⓑ down and remove the top guide. Section Ⓒ of the top guide is then brought under the cassette lid. Then remove the top guide by pressing the whole cassette tape down. (See Fig.2-1-2.)
(5) Remove the cassette tape by holding both the slackened tape and the cassette lid.
(6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

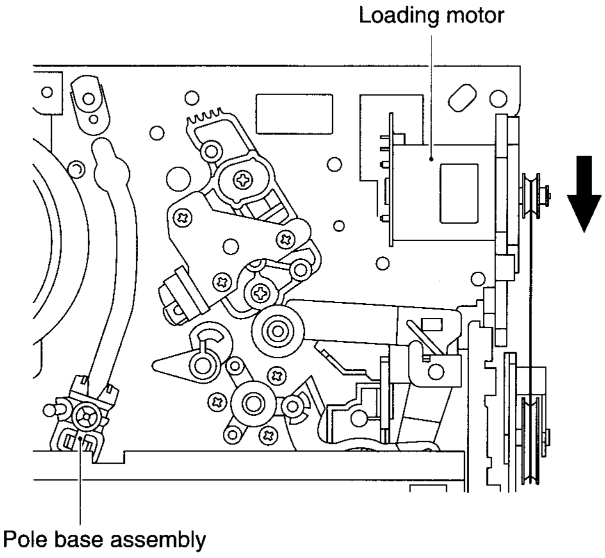


Fig. 2-1-1

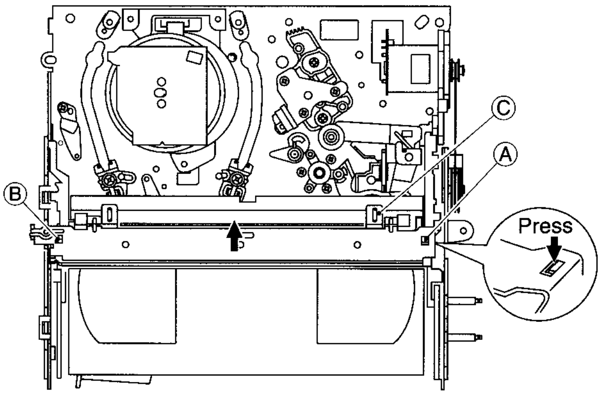


Fig. 2-1-2

2. In case of mechanical failure

If you cannot remove the cassette tape which is loaded because of any mechanical failure, manually remove it by taking the following steps.

(1) Unplug the power cable and remove the top cover, front panel assembly and others so that the mechanism assembly is visible. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD.)

(2) While keeping the tension arm assembly of the mechanism assembly free from tension, pull the tape on the pole base assembly (supply or take-up side) out of the guide roller. (See Fig.2-1-3.)

(3) Take the spring of the pinch roller arm assembly off the hook of the press lever assembly, and detach it from the tape. (See Fig.2-1-4.)

(4) In the same way as in the electrical failure instructions in 2.1.3 (4), remove the top guide.

(5) Raise the cassette tape cover. By keeping it in that position, draw out the cassette tape case from the cassette holder and take out the tape.

(6) By hanging the pinch roller arm assembly spring back on the hook, take up the slack of the tape into the cassette.

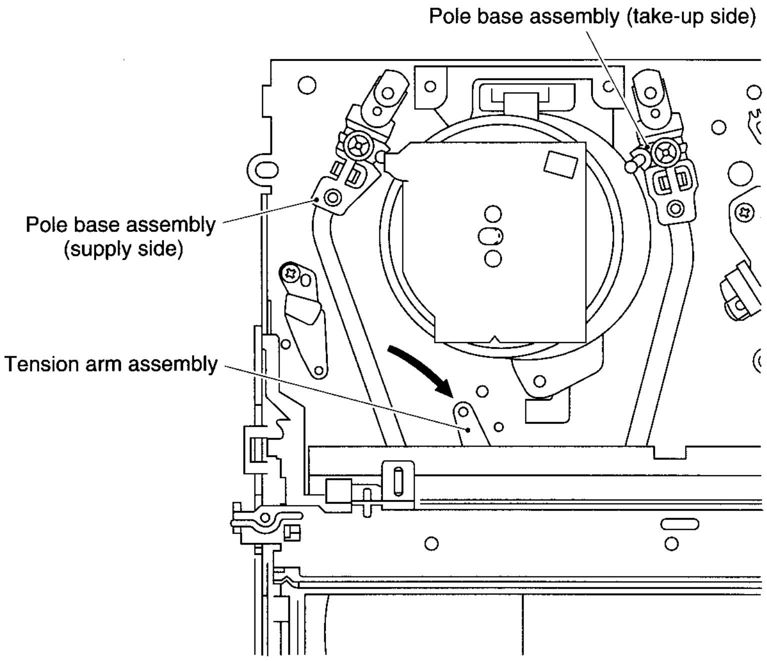

Pole base assembly (take-up side)
Pole base assembly (supply side)
Tension arm assembly

Fig. 2-1-3

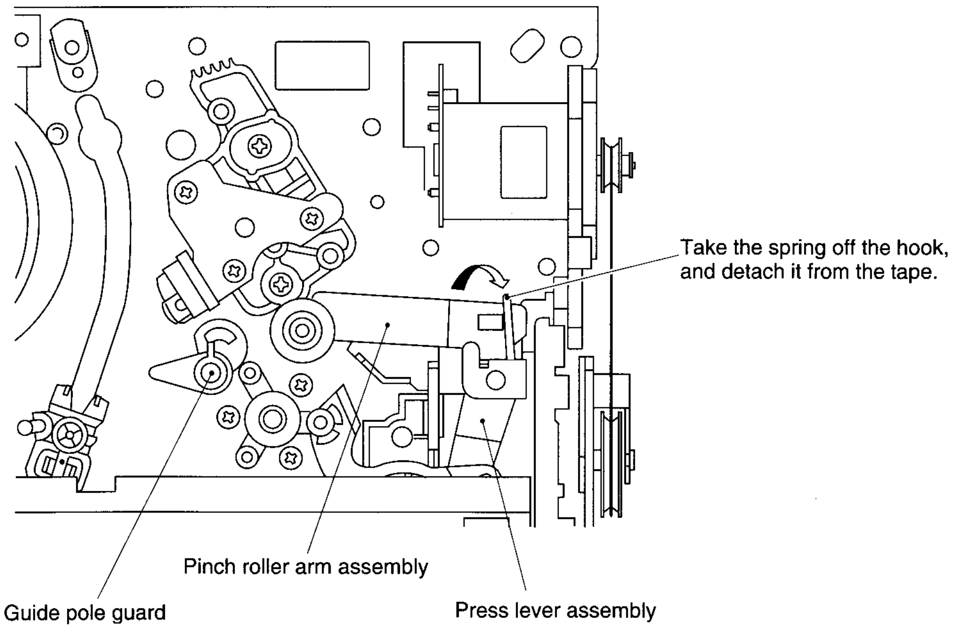

Take the spring off the hook, and detach it from the tape.
Pinch roller arm assembly
Guide pole guard
Press lever assembly

Fig. 2-1-4

2.1.4 Jigs and Tools Required for Adjustment

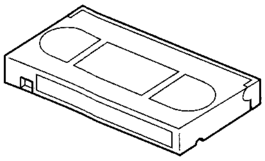
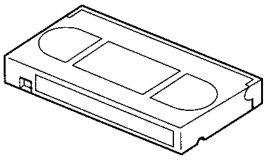
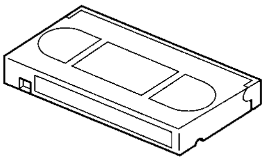
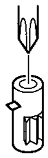
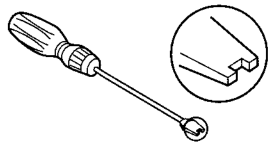
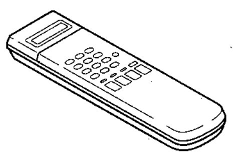
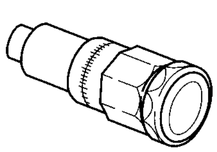
Alignment tape (SP) MHPE	Alignment tape (LP) MHPE-L	Back tension cassette gauge PUJ48076-2	A/C head positioning tool PTU94010
			
Roller driver PTU94002	Jig RCU PTU94023B	Torque gauge PUJ48075-2	
			

Table 2-1-1 Jigs and tools required for adjustment

2.1.5 Maintenance and Inspection

1. Location of major mechanical parts

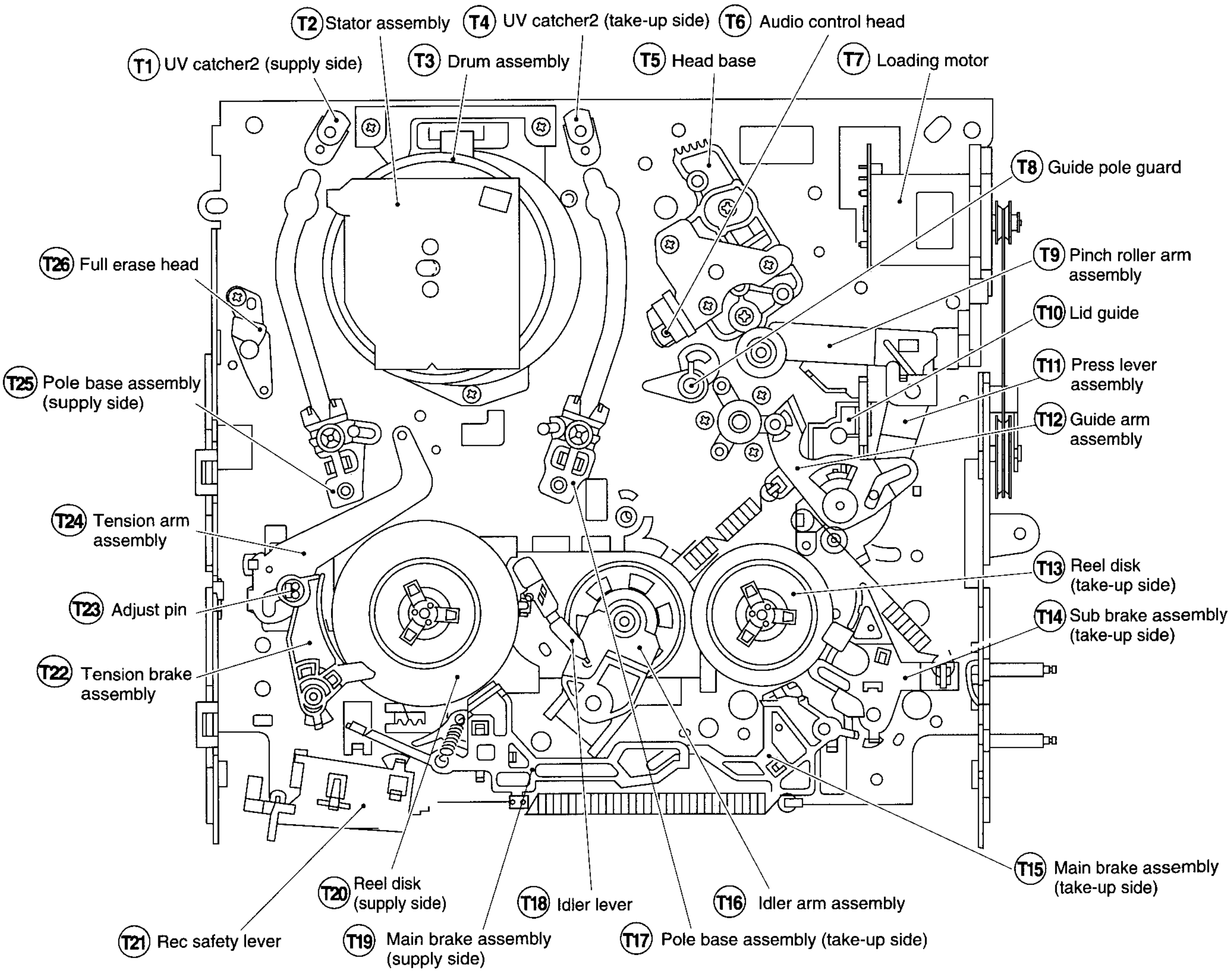
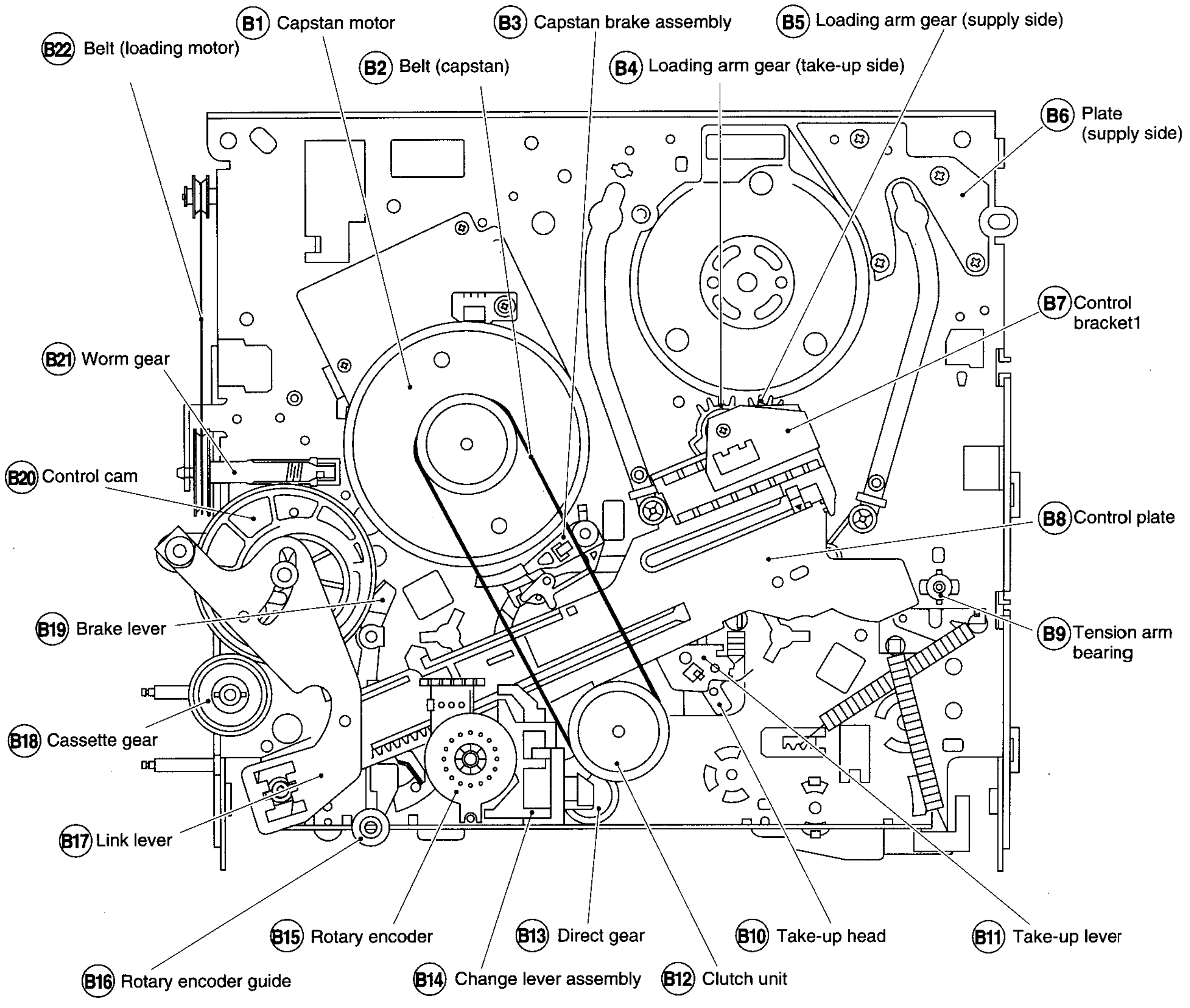
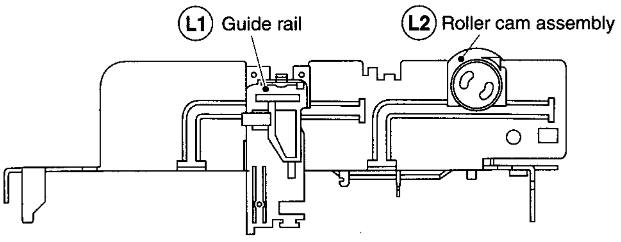

T2 Stator assembly
T4 UV catcher2 (take-up side)
T6 Audio control head
T1 UV catcher2 (supply side)
T3 Drum assembly
T5 Head base
T7 Loading motor
T8 Guide pole guard
T26 Full erase head
T9 Pinch roller arm assembly
T10 Lid guide
T25 Pole base assembly (supply side)
T11 Press lever assembly
T12 Guide arm assembly
T24 Tension arm assembly
T13 Reel disk (take-up side)
T23 Adjust pin
T14 Sub brake assembly (take-up side)
T22 Tension brake assembly
T15 Main brake assembly (take-up side)
T20 Reel disk (supply side)
T18 Idler lever
T16 Idler arm assembly
T21 Rec safety lever
T19 Main brake assembly (supply side)
T17 Pole base assembly (take-up side)

Fig. 2-1-5 Mechanism assembly top side



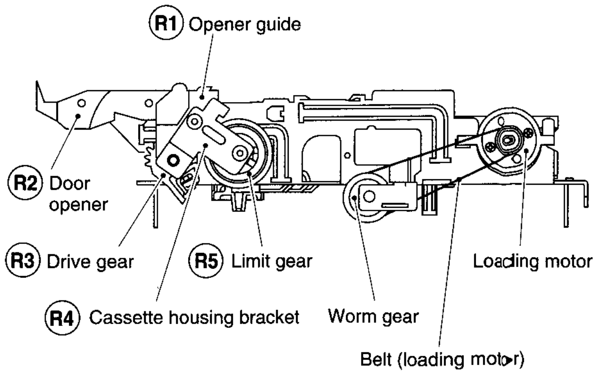
B1 Capstan motor
B3 Capstan brake assembly
B5 Loading arm gear (supply side)
B22 Belt (loading motor)
B2 Belt (capstan)
B4 Loading arm gear (take-up side)
B6 Plate (supply side)
B7 Control bracket1
B21 Worm gear
B20 Control cam
B8 Control plate
B19 Brake lever
B9 Tension arm bearing
B18 Cassette gear
B17 Link lever
B15 Rotary encoder
B13 Direct gear
B10 Take-up head
B11 Take-up lever
B16 Rotary encoder guide
B14 Change lever assembly
B12 Clutch unit

Fig. 2-1-6 Mechanism assembly bottom side



L1 Guide rail
L2 Roller cam assembly

Fig. 2-1-7 Mechanism assembly left side



R1 Opener guide
R2 Door opener
R3 Drive gear
R5 Limit gear
Loading motor
R4 Cassette housing bracket
Worm gear
Belt (loading motor)

Fig. 2-1-8 Mechanism assembly right side

Note: *This table shows the order in which parts are removed for replacement. To replace parts, remove them in the order of 1 to 18 as shown in the table. To install them, reverse the removal sequence.*
The circled numbers (symbols and numbers) preceding the individual part names represent the numbers in the "Location of major mechanical parts" table. Also, the "T", "B", and "T/B" on the right of each part name shows that the particular part is removed from the front, from the back, and from both sides of the mechanism, respectively.

Symbols and numbers	Removal parts / (Reference items) Replacement parts	Front (T)/Back (B) of mechanism	Number of removal steps	Guide rail	Roller cam assembly	Cassette housing bracket	Opener guide	Relay gear	Cassette holder assembly	Drive gear	Drive arm	Pinch roller arm assembly	Guide arm assembly	Press lever assembly	UV catcher2	Rotary encoder	Clutch unit	Change lever assembly	Direct gear	Link lever	Worm gear	Control bracket1	Control plate	Loading arm gear (supply side)	Loading arm gear (take-up side)	Take-up lever	Sub brake assembly (take-up side)	Main brake assembly (take-up side)	Reel disk (take-up side)	Tension brake assembly	Tension arm assembly	Idler lever	Brake lever
	Symbols and numbers			(L1)	(L2)	(R4)	(R1)	–	–	(R3)	–	(T9)	(T12)	(T11)	(T1),(T4)	(B15)	(B12)	(B14)	(B13)	(B17)	(B21)	(B7)	(B8)	(B5)	(B4)	(B11)	(T14)	(T15)	(T13)	(T22)	(T24)	(T18)	(B19)
(L1)	2.2.3 Guide rail	T	1																														
(L2)	2.2.3 Roller cam assembly	T	1																														
(R4)	2.2.3 Cassette housing bracket	T	1																														
(R1)	2.2.3 Opener guide	T	2			1																											
(R2)	2.2.3 Door opener	T	3			1	2																										
–	2.2.3 Relay gear	T	3			1	2																										
(R5)	2.2.3 Limit gear	T	3			1	2																										
–	2.2.3 Cassette holder assembly	T	6	1	2	3	4	5																									
(R3)	2.2.3 Drive gear	T	4			1	2	3																									
–	2.2.3 Drive arm	T	8	1	2	3	4	5	6	7																							
(T9)	2.2.4 Pinch roller arm assembly	T	1																														
(T12)	2.2.5 Guide arm assembly	T	1																														
(T11)	2.2.5 Press lever assembly	T	3									1	2																				
(T6)	2.2.6 Audio control head	T	1																														
(T7)	2.2.7 Loading motor	T	1																														
(B1)	2.2.8 Capstan motor	T/B	1																														
(T1),(T4)	2.2.9 UV catcher2	T	1																														
(T17)	2.2.9 Pole base assembly (take-up side)	T/B	2												1																		
(T25)	2.2.9 Pole base assembly (supply side)	T/B	2												1																		
(B15)	2.2.10 Rotary encoder	B	1																														
(B12)	2.2.11 Clutch unit	B	1																														
(B14)	2.2.12 Change lever assembly	B	3													1	2																
(B13)	2.2.12 Direct gear	B	4													1	2	3															
–	2.2.12 Clutch gear1	B	5													1	2	3	4														
(B17)	2.2.13 Link lever	B	1																														
(B18)	2.2.14 Cassette gear	B	2																	1													
(B20)	2.2.14 Control cam	B	2																	1													
(B21)	2.2.14 Worm gear	B	1																														
(T10)	- Lid guide	T/B	5									1	2	3							4												
(B7)	2.2.15 Control bracket1	B	1																														
(B8)	2.2.15 Control plate	B	6													1	2	3		4		5											
(B5)	2.2.16 Loading arm gear (supply side)	B	7													1	2	3		4		5	6										
(B4)	2.2.16 Loading arm gear (take-up side)	B	8													1	2	3		4		5	6	7									
–	2.2.16 Loading arm gear shaft	B	9													1	2	3		4		5	6	7	8								
(B11)	2.2.17 Take-up lever	T/B	7													1	2	3		4		5	6										
(B10)	2.2.17 Take-up head	T/B	8													1	2	3		4		5	6			7							
–	2.2.17 Control plate guide	T/B	8													1	2	3		4		5	6			7							
(B3)	2.2.18 Capstan brake assembly	T/B	7													1	2	3		4		5	6										
(T14)	2.2.19 Sub brake assembly(take-up side)	T/B	15	1	2	3	4	5	6	7	8					9	10	11		12		13	14										
(T15)	2.2.20 Main brake assembly(take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11		12		13	14				15						
(T19)	2.2.20 Main brake assembly(supply side)	T/B	9	1	2	3	4	5	6	7	8																						
(T13)	2.2.20 Reel disk (take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11		12		13	14				15						
(T22)	2.2.21 Tension brake assembly	T/B	9	1	2	3	4	5	6	7	8																						
(T20)	2.2.21 Reel disk (supply side)	T/B	10	1	2	3	4	5	6	7	8																			9			
(T24)	2.2.21 Tension arm assembly	T/B	10	1	2	3	4	5	6	7	8																			9			
(B9)	2.2.21 Tension arm bearing	T/B	10	1	2	3	4	5	6	7	8																			9			
(T18)	2.2.22 Idler lever	T/B	17	1	2	3	4	5	6	7	8					9	10	11		12		13	14							15	16		
(T16)	2.2.22 Idler arm assembly	T/B	18	1	2	3	4	5	6	7	8					9	10	11		12		13	14							15	16	17	
(B19)	- Brake lever	T/B	18	1	2	3	4	5	6	7	8					9	10	11		12		13	14				15	16	17				
(B16)	- Rotary encoder guide	T/B	19	1	2	3	4	5	6	7	8					9	10	11		12		13	14				15	16	17				18

2. Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

(1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note: *Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.*

(2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.

(3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

3. Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

(1) See the mechanism assembly and disassembly diagrams for the lubricating or greasing spots. See Table 2-1-2 for the types of oil or grease to be used.

Type	Name	Serial No.	Symbols on the disassembly diagrams
Grease	Maltemp SH-P	KYODO-SH-P	AA
Oil	Cosmohydro HV56	COSMO-HV56	BB

Table 2-1-2 Grease and oil used for the unit

4. Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning,lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions.However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time,even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Capstan motor (Shaft)	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Capstan brake assembly		○
	Main brake assembly		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Clutch unit		○
	Worm gear		○
	Control plate		○
Other	Brush	★○	★○
	Tension brake assembly	○	○
	Rotary encoder		○

★: Cleaning

○: Inspection or Replacement if necessary

Table 2-1-3

2.2 REPLACEMENT OF MAJOR PARTS

2.2.1 Before Starting Disassembling (Phase matching between mechanical parts)

The mechanism of this unit is closely linked with the rotary encoder and system controller circuits.

Since the system controller detects the status of mechanical operation in response to phases of the rotary encoder (internal switch positions), the mechanism may not operate properly unless such parts as the rotary encoder, control plate, loading arm gear, control cam, cassette gear, limit gear, relay gear and drive gear are installed in their correct positions.

Especially, this model is not provided with any cassette housing assembly, so that cassette loading and unloading must be accomplished by operation of the cassette holder assembly. The latter is in turn driven by such parts as the drive gear, relay gear and limit gear. Exercise enough care, therefore, to have the phases of all this gear matching one another.

(For information on phase matching of the mechanism, see the instructions on how to install individual parts.)

This unit is provided with a mechanism assembly mode. It is therefore necessary to enter this mode for assembling and disassembling procedures.
This mode is usually not in use, manually set it when it is required.

2.2.2 How to Set the Mechanism Assembling Mode

Remove the mechanism assembly and place it bottom side up. (See SECTION 1 DISASSEMBLY.) Turn the worm gear toward the front so that the guide hole of the control cam is brought into alignment with the hole at the mechanism assembly chassis. This position renders the mechanism assembling mode operational. Make sure that the control plate is located in alignment with the mark E. (See Fig.2-2-1.)

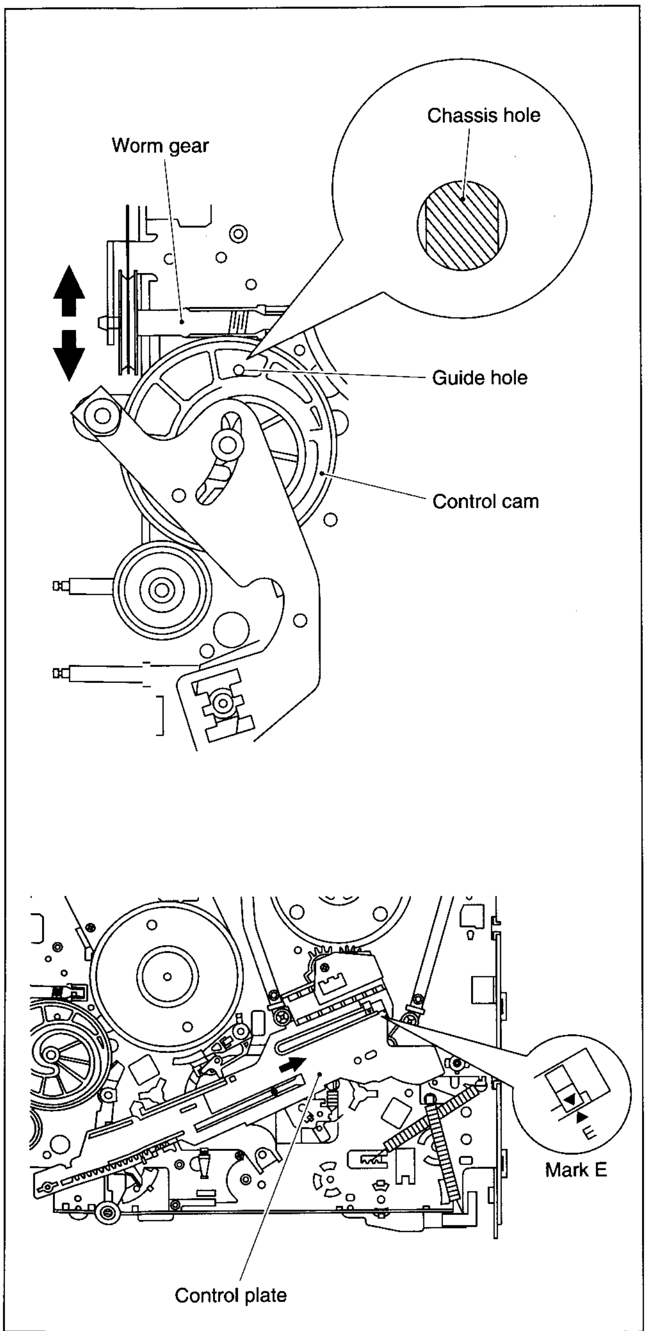

Chassis hole
Worm gear
Guide hole
Control cam
Mark E
E
Control plate

Fig. 2-2-1

2.2.3 Cassette Holder Assembly

1. How to remove

(1) Remove the guide rail and roller cam assembly. (See Fig.2-2-2.)
(3 lugs on the guide rail and one lug on the roller cam assembly)

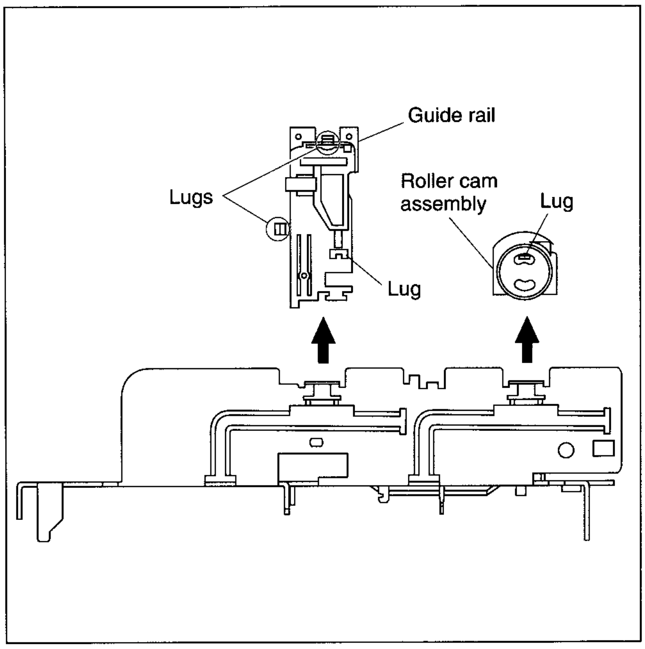

Guide rail
Lugs
Roller cam assembly
Lug
Lug

Fig. 2-2-2

(2) Remove the two slit washers and remove the cassette housing bracket. (See Fig.2-2-3.)
(3) Remove the opener guide, spring(A), door opener, relay gear and limit gear. (See Fig.2-2-3.)

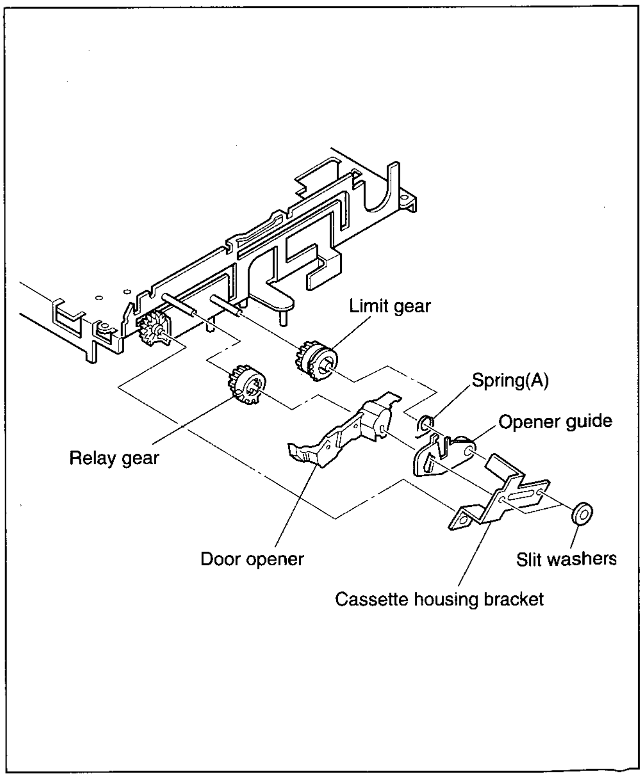

Limit gear
Spring(A)
Opener guide
Relay gear
Door opener
Slit washers
Cassette housing bracket

Fig. 2-2-3

(4) While swinging the lock levers (R) and (L) of the cassette holder assembly toward the front, slide the cassette holder assembly until its legs come to where the guide rail and the roller cam assembly have been removed (so that the drive arm is upright). (See Fig.2-2-4.)

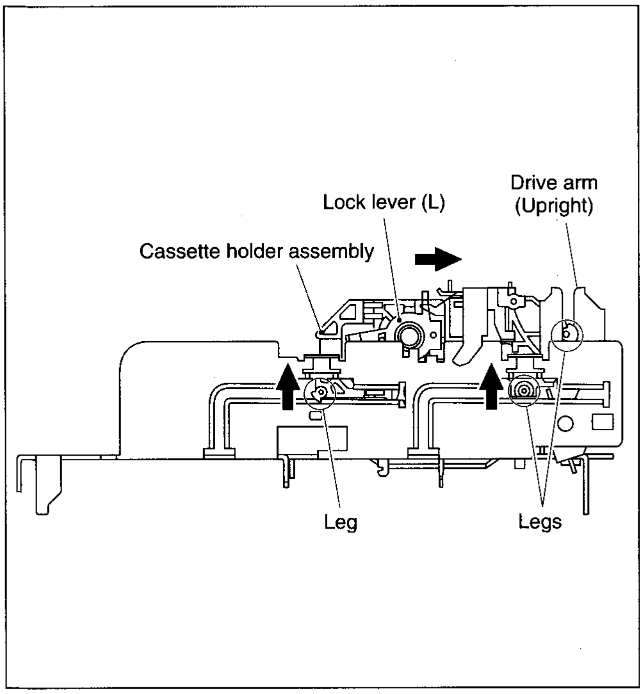

Drive arm (Upright)
Lock lever (L)
Cassette holder assembly
Leg
Legs

Fig. 2-2-4

(5) While holding the left side of the cassette holder, lift the cassette holder assembly so that the three legs on the left side are all released. Then pull the legs Ⓐ and Ⓑ on the right side out of the rail and also pull up the leg Ⓒ. (See Fig.2-2-5 and Fig.2-2-6.)

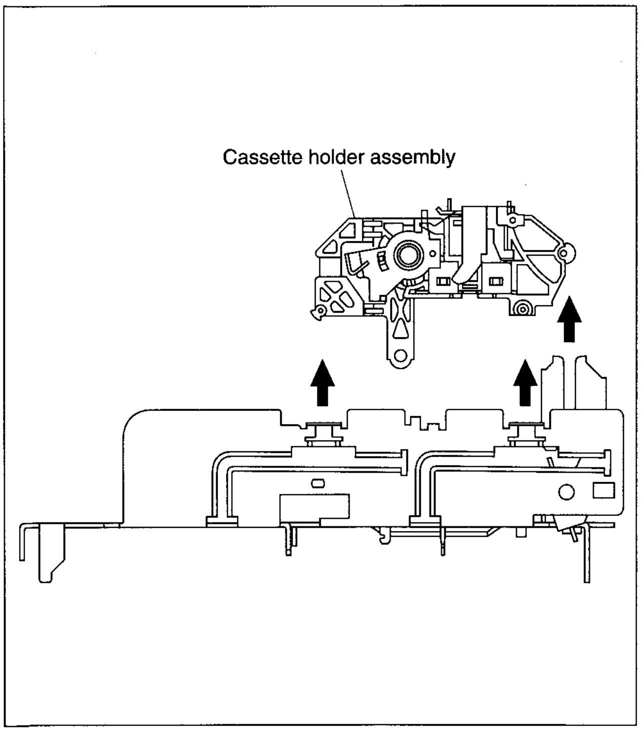

Cassette holder assembly

Fig. 2-2-5

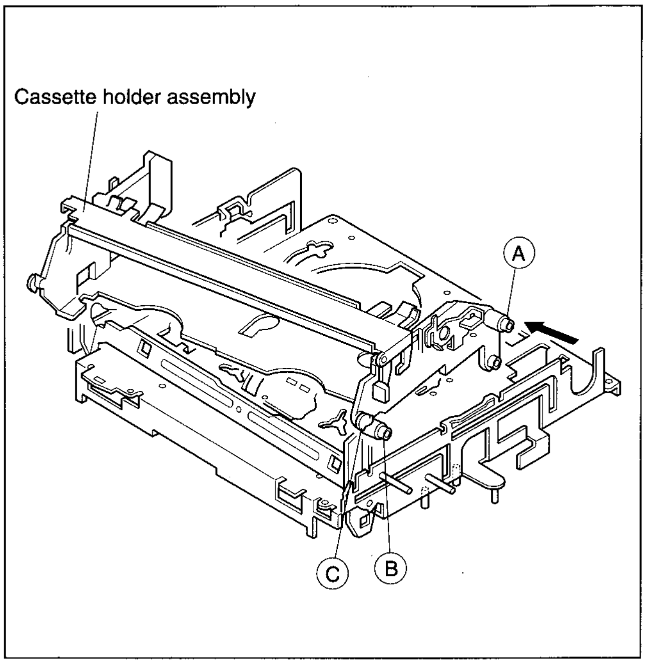

Cassette holder assembly
Ⓐ
Ⓒ
Ⓑ

Fig. 2-2-6

(6) Draw out the drive gear, and remove the drive arm.

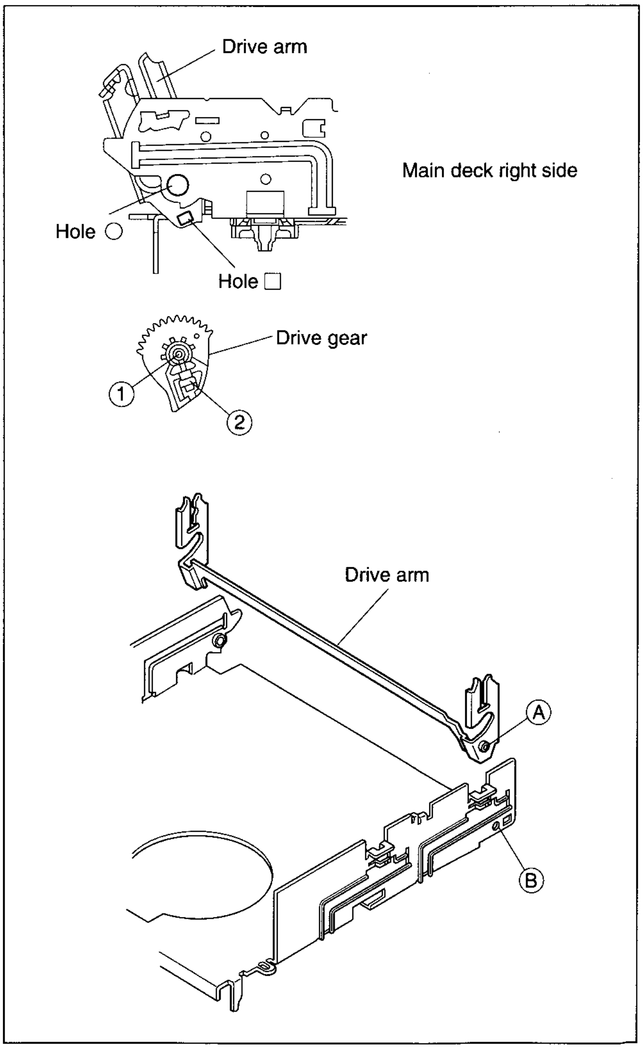

Drive arm
Main deck right side
Hole ○
Hole □
Drive gear
①
②
Drive arm
Ⓐ
Ⓑ

Fig. 2-2-7

2. How to install (Phase matching)

(1) Insert the section Ⓐ of the drive arm into the section Ⓑ of the main deck.
(2) Insert the section ① of the drive gear into the round hole, and the section ② into the square hole on the drive arm. (See Fig.2-2-7.)
(3) Hold the drive arm upright and fit the leg Ⓒ on the right side of the cassette holder assembly into the groove. (See Fig.2-2-8.)
(4) While swinging the lock lever (R) of the cassette holder assembly toward the front, put the legs Ⓐ and Ⓑ into the rail. (See Fig.2-2-8.)
(5) Drop the three legs on the left side of the cassette holder assembly into the groove at one time. (See Fig.2-2-9.)
(6) Slide the whole cassette holder assembly toward the front to bring it to the eject end position.
(7) Install the limit gear so that the notch on the outer circumference of the limit gear is brought into alignment with the guide hole on the main deck. (See Fig.2-2-10.)
(8) Install so that the notch on the periphery of the relay gear is aligned with the notch of the main deck and that hole A of the relay gear is aligned with the hole A of the limit gear and that hole B of the relay gear is aligned with the hole B of the drive gear. (See Fig.2-2-10.)
(9) Install the door opener, opener guide, spring(A) and cassette housing bracket and fasten the two slit washers.

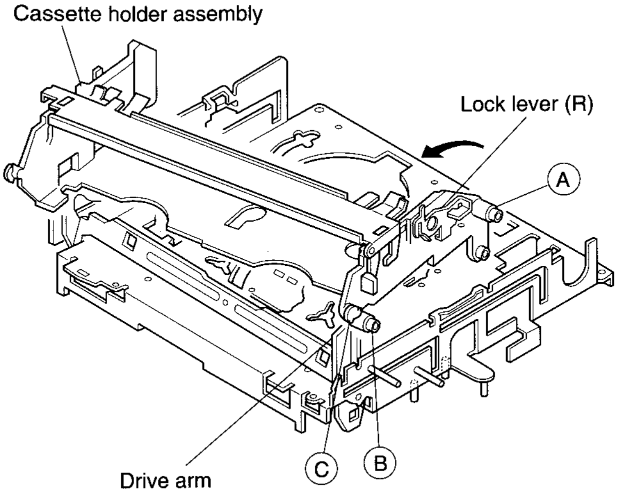

Cassette holder assembly
Lock lever (R)
Ⓐ
Drive arm
Ⓒ
Ⓑ

Fig. 2-2-8

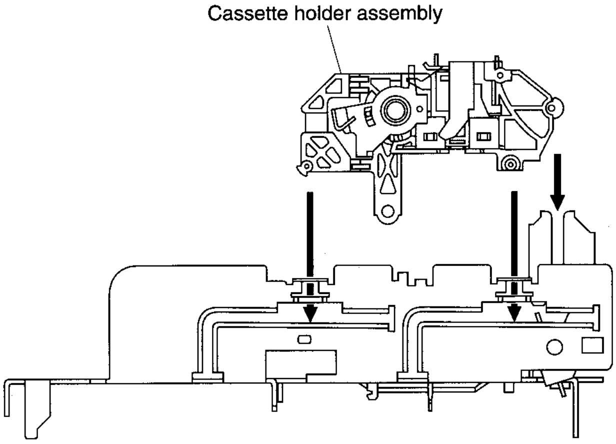

Cassette holder assembly

Fig. 2-2-9

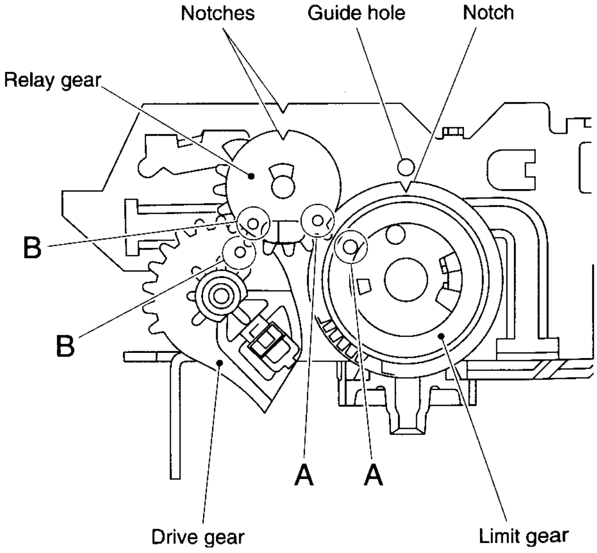

Notches
Guide hole
Notch
Relay gear
B
B
A
A
Drive gear
Limit gear

Fig. 2-2-10

2.2.4 Pinch Roller Arm Assembly

1. How to remove

(1) Remove the spring from the hook of the press lever assembly.

(2) Remove the slit washer and remove the pinch roller seat 2. (See Fig.2-2-11.)

(3) Remove the pinch roller arm assembly by pulling it up.

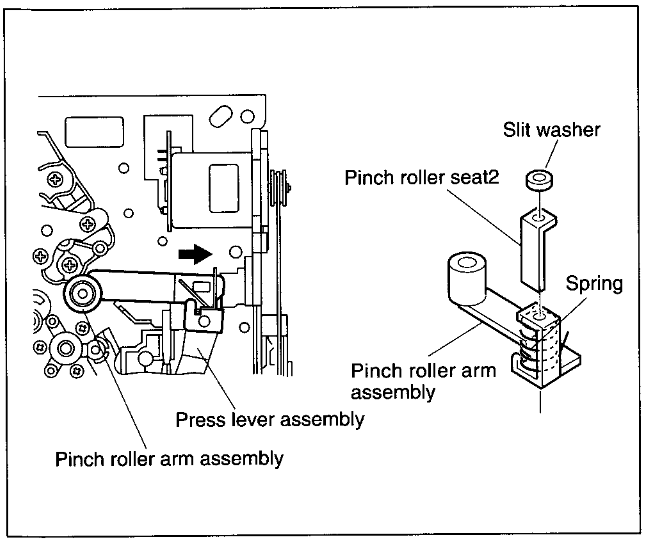

Slit washer
Pinch roller seat2
Spring
Pinch roller arm assembly
Press lever assembly
Pinch roller arm assembly

Fig. 2-2-11

2.2.5 Guide Arm Assembly and Press Lever Assembly

1. How to remove

(1) Remove the spring and expand the lug of the lid guide in the arrow-indicated direction. Then remove the guide arm assembly by pulling it up.

(2) Remove the press lever assembly by pulling it up. (See Fig.2-2-12.)

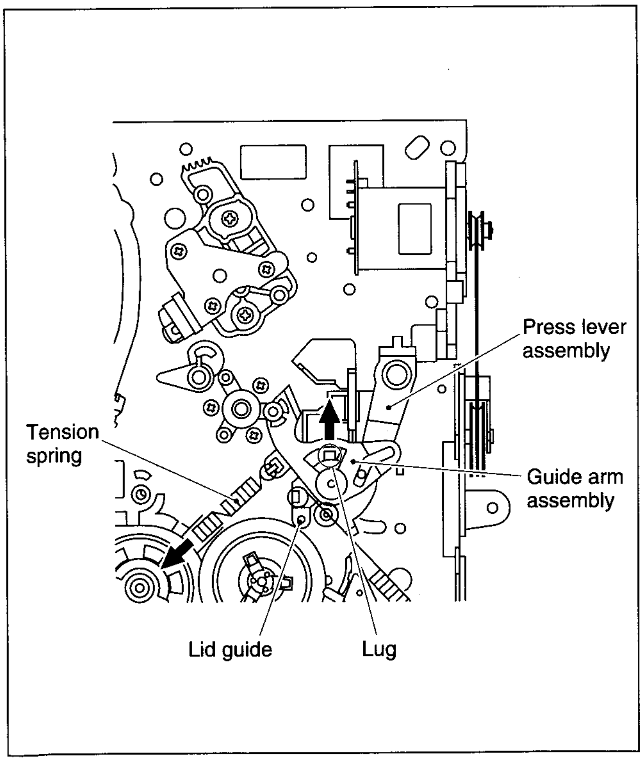

Press lever assembly
Tension spring
Guide arm assembly
Lid guide
Lug

Fig. 2-2-12

2.2.6 Audio Control Head

1. How to remove

(1) Remove the two screws (A) and remove the audio control head together with the head base.

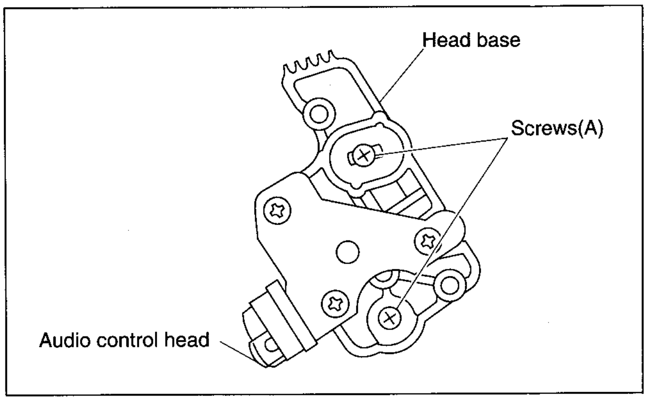

Head base
Screws(A)
Audio control head

Fig. 2-2-13

(2) When replacing only the audio control head, remove the three screws (B) while controlling the compression spring.

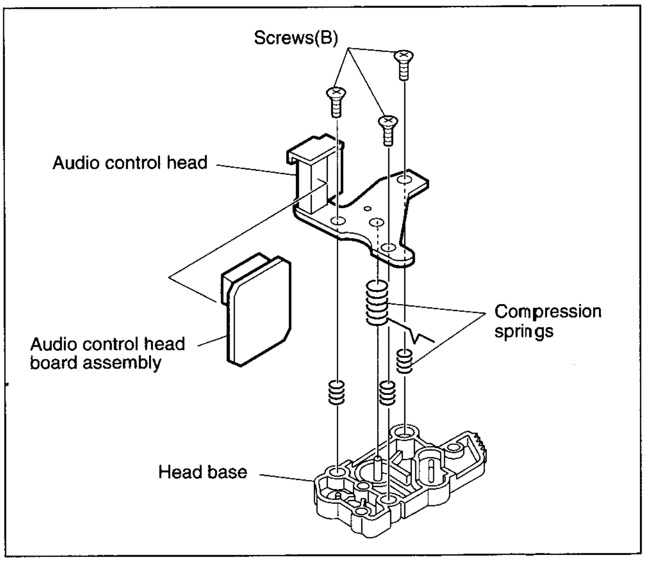

Screws(B)
Audio control head
Compression springs
Audio control head board assembly
Head base

Fig. 2-2-14

2. How to install

(1) To make the post-installation adjustment easier, set the temporary level as indicated in Fig.2-2-15. Also make sure that the screw center is brought into alignment with the center position of the slot.

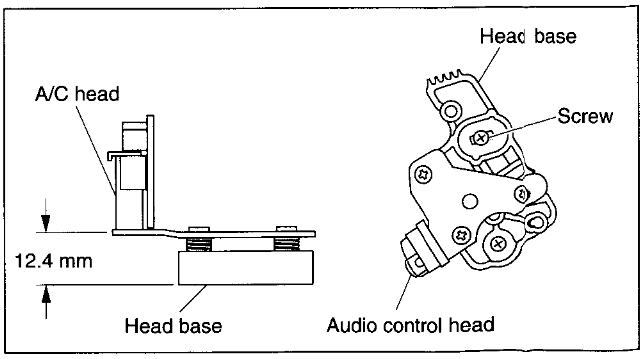

A/C head
12.4 mm
Head base
Head base
Screw
Audio control head

Fig. 2-2-15

2.2.7 Loading Motor

1. How to remove

(1) Remove the belt wound around the worm gear.

(2) Open the two lugs of the motor guide and remove the loading motor, loading motor board assembly and motor guide altogether by pulling them up.

(3) When replacing the loading motor board assembly, take care with the orientation of the loading motor. (Install so that the loading motor label faces upward.)

(4) When the motor pulley has been replaced, choose the fitting dimension as indicated in Fig.2-2-16.

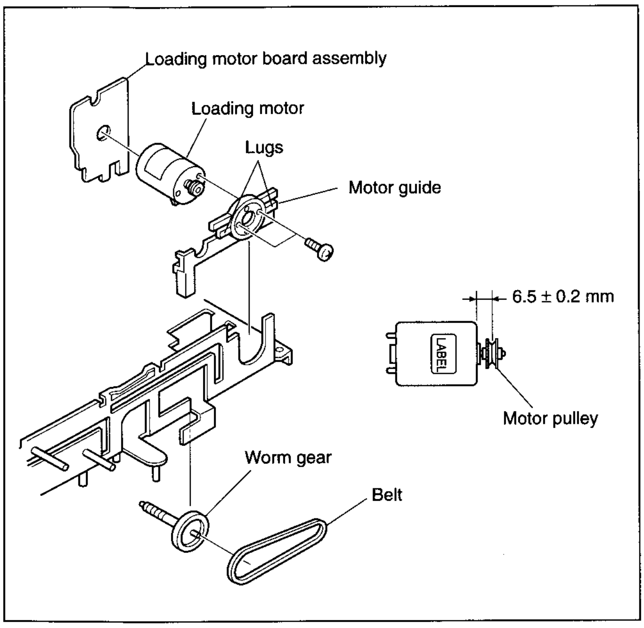


Fig. 2-2-16

2.2.8 Capstan Motor

1. How to remove

(1) Remove the belt (capstan) on the mechanism assembly back side.

(2) Remove the three screws (A) and remove the capstan motor.

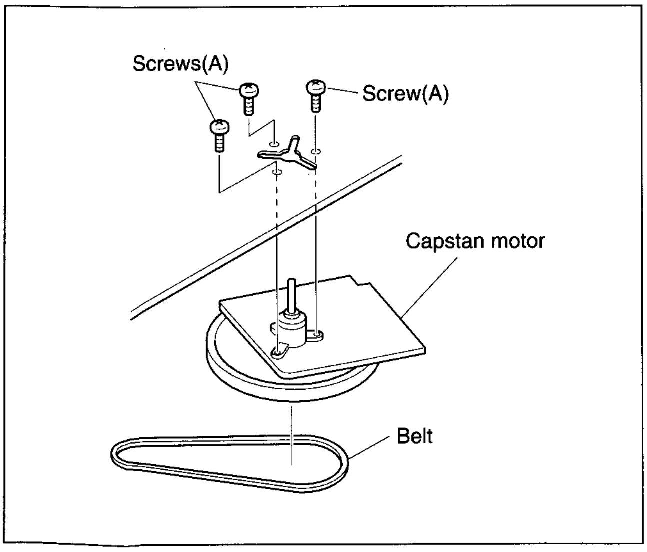


Fig. 2-2-17

2. How to install (Centering the mounting position)

When the capstan motor has once been removed and then reinstalled out of the initial correct position in the rotational direction, the capstan motor current may be unstable during operation in high or low temperatures. This may result in greater Wow & Flutter and occasionally in power breakdown because of current over - load. Install the capstan motor while following the procedure given below.

(The capstan motor is centrally located when the unit is shipped from the factory.)

(1) Provisionally tighten the three screws (A) securing the capstan motor.

(2) Install the mechanism assembly to which the capstan motor is provisionally fastened on the bottom chassis which incorporates the Main board assembly. (No need to tighten the screws for mounting the mechanism.) Make sure that all the connectors for the mechanism assembly and the Main board assembly are correctly installed as indicated in Fig. 2-2-18.

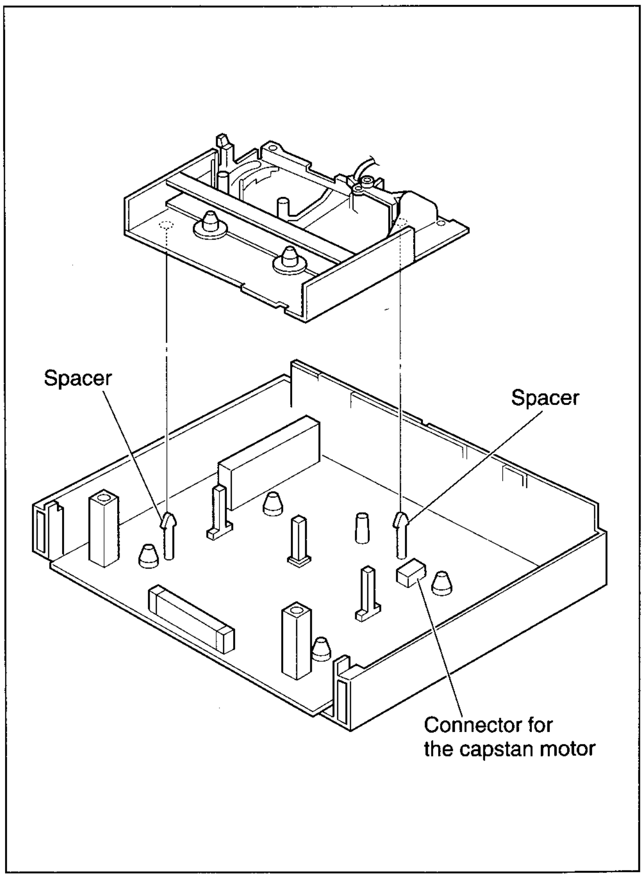


Fig. 2-2-18

(3) Making sure that the connector for the capstan motor is correctly mounted, and securely tighten the three screws (A).

Note: ***When the capstan motor has been replaced with a new one, perform recording in the EP(or LP) mode for at least 2 minutes at normal temperatures immediately before starting the FF/REW or SEARCH operations (Aging).***

2.2.9 Pole Base Assembly (supply or take-up side)

1. How to remove

(1) Remove the UV catcher 2 on the removal side by loosening the screw (A).

(2) Remove the pole base assembly on the supply side from the mechanism assembly by loosening the screw (B) on the mechanism assembly back side and sliding the pole base assembly toward the UV catcher 2.

(3) As for the pole base assembly on the take-up side, turn the pulley of the loading motor to lower the cassette holder because the screw (B) is hidden under the control plate. (See the "Procedures for Lowering the Cassette holder assembly" of 1.3 DISASSEMBLY/ASSEMBLY METHOD.) Further turn the motor pulley to move the cassette holder until the screw (B) is no longer under the control plate (in the half-loading position). Then remove it as done for the supply side by removing the screw (B).

NOTE: *After reinstalling the Pole base assembly and the UV catcher2, be sure to perform compatibility adjustment.*

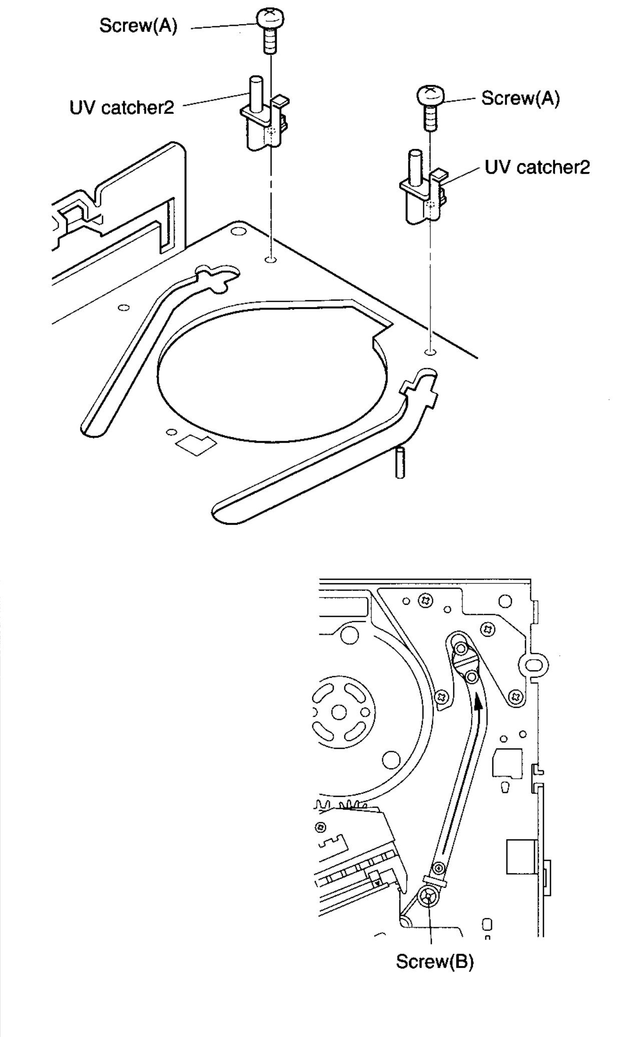

Screw(A)
UV catcher2
Screw(A)
UV catcher2
Screw(B)

Fig. 2-2-19

2.2.10 Rotary Encoder

1. How to remove

(1) Remove the screw (A) and remove the rotary encoder by pulling it up. (See Fig. 2-2-20.)

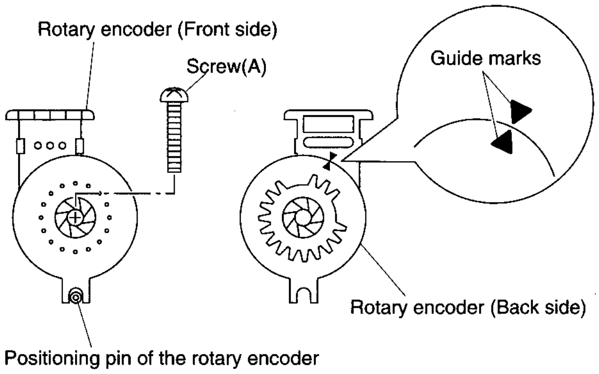

Rotary encoder (Front side)
Screw(A)
Guide marks
Rotary encoder (Back side)
Positioning pin of the rotary encoder

Fig. 2-2-20

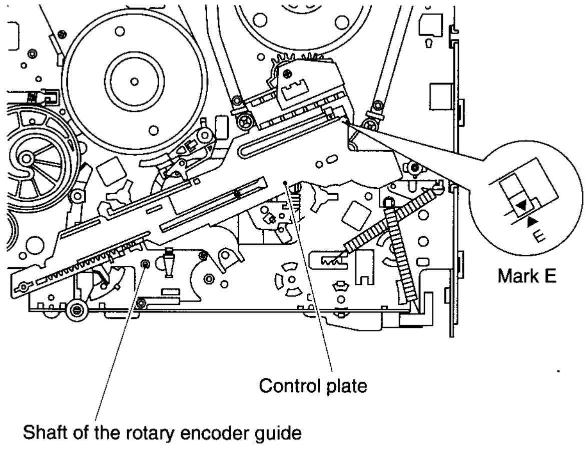

E
Mark E
Control plate
Shaft of the rotary encoder guide

Fig. 2-2-21

2. How to install (Phase matching)

(1) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft and bring the guide marks on the rotary encoder into alignment as indicated in Fig.2-2-20. (See Fig. 2-2-20 and Fig. 2-2-21.)

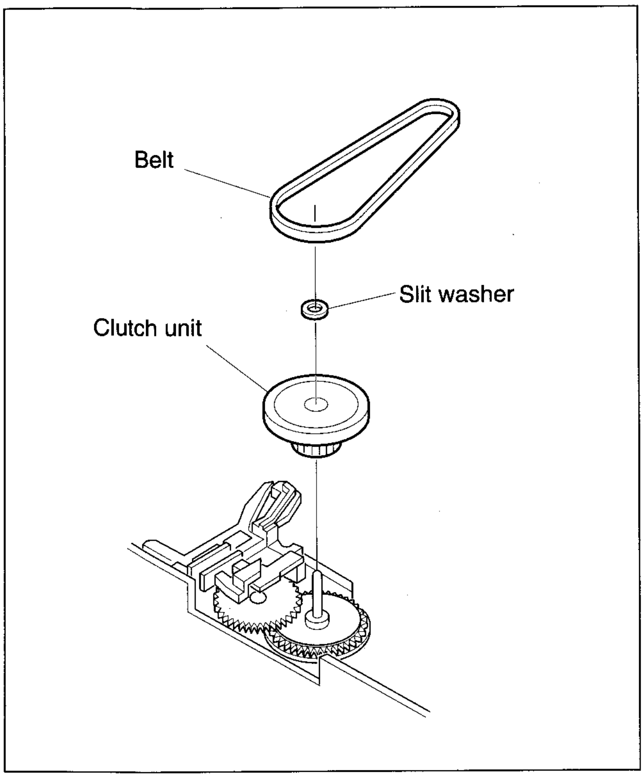
(2) Turn over the rotary encoder with its guide marks kept in alignment and install it by fitting on the shaft of the rotary encoder guide and the positioning pin.

(3) Tighten the screw (A) to complete the installation.

2.2.11 Clutch Unit

(1) Remove the belt wound around the capstan motor and the clutch unit.

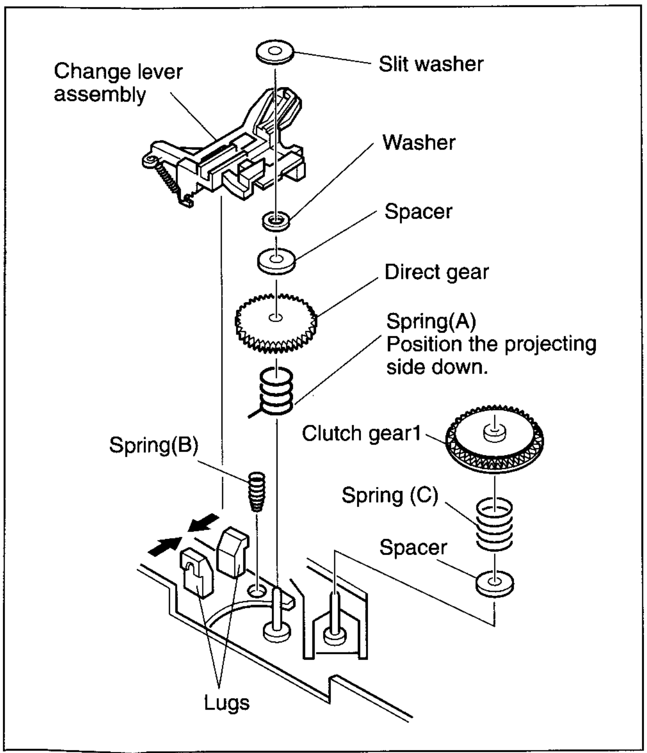
(2) Remove the slit washer and remove the clutch unit.



Belt
Slit washer
Clutch unit

Fig. 2-2-22

2.2.12 Change Lever Assembly, Direct Gear and Clutch Gear1



Change lever assembly
Slit washer
Washer
Spacer
Direct gear
Spring(A)
Position the projecting side down.
Spring(B)
Clutch gear1
Spring (C)
Spacer
Lugs

Fig. 2-2-23

1. How to remove

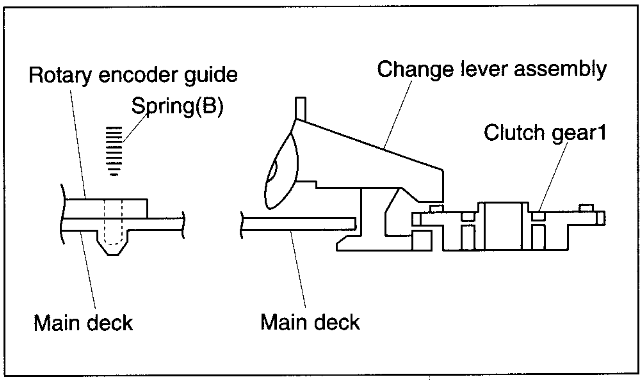
(1) Release the two lugs of the rotary encoder guide in the arrow-indicated direction and remove the change lever assembly.

(2) Remove the slit washer retaining the direct gear and remove the latter.
Take care so as not to lose the washer and spring. (See Fig.2-2-23.)

2. How to install

(1) Install the clutch gear1, spring (A), spring (C), direct gear, spacer and others to the individual shafts of the main deck, and finally the slit washer. (See Fig.2-2-23.)

(2) Let the spring (B) drops into the rotary encoder guide hole and install the change lever assembly.(Take care not to mistake a direction of the spring.) The point is to slightly lift the clutch gear1 and catch it from the both sides with the assembly. (See Fig.2-2-24.)



Rotary encoder guide
Spring(B)
Change lever assembly
Clutch gear1
Main deck
Main deck

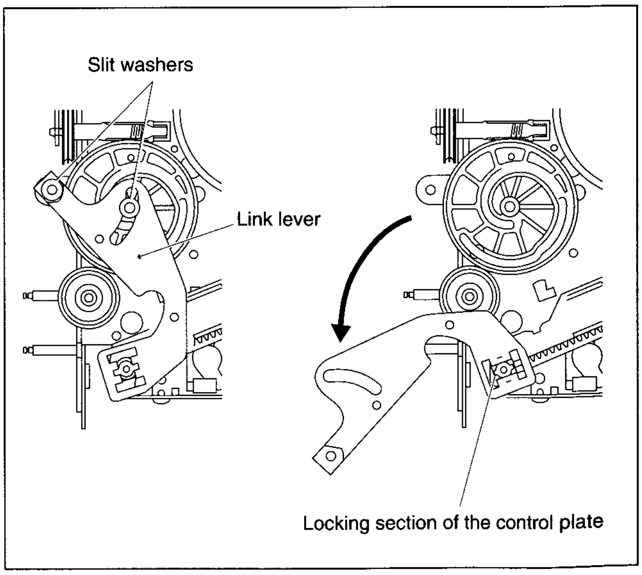
Fig. 2-2-24

2.2.13 Link Lever

1. How to remove

(1) Remove the two slit washers.

(2) Remove the link lever by lifting it from the shaft retained by the slit washers. Then swing the link lever counterclockwise and remove it from the locking section of the control plate.



Slit washers
Link lever
Locking section of the control plate

Fig. 2-2-25

2. How to install (Phase matching)

(1) Slide the control plate so that its mark E is aligned with the mark ▼ on the loading arm gear shaft. (See Fig.2-2-26.)

(2) Rotate the worm gear until the guide hole of the control cam is aligned exactly with the guide hole of the main deck. (See Fig.2-2-27.)

(3) Insert the link lever into the locking section of the control plate. (See Fig.2-2-25.)

(4) Rotate the link lever clockwise so that it is installed on the shafts in the center and on the left of the control cam.

(5) Fasten the slit washers at these two points.

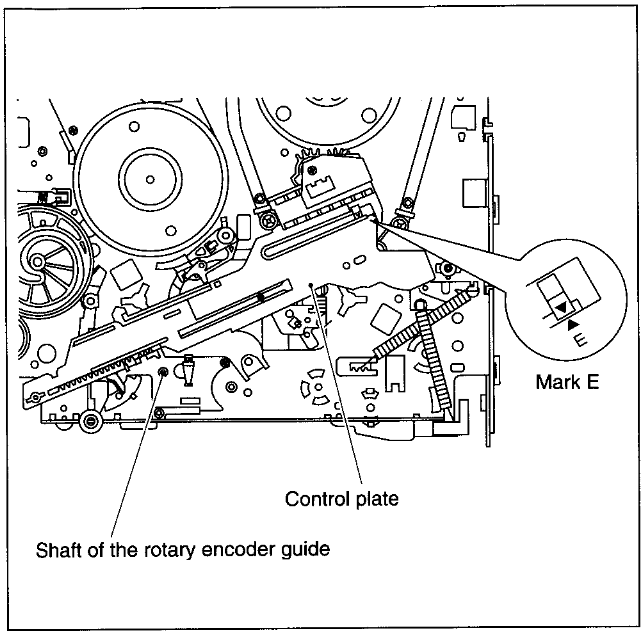

E
Mark E
Control plate
Shaft of the rotary encoder guide

Fig. 2-2-26

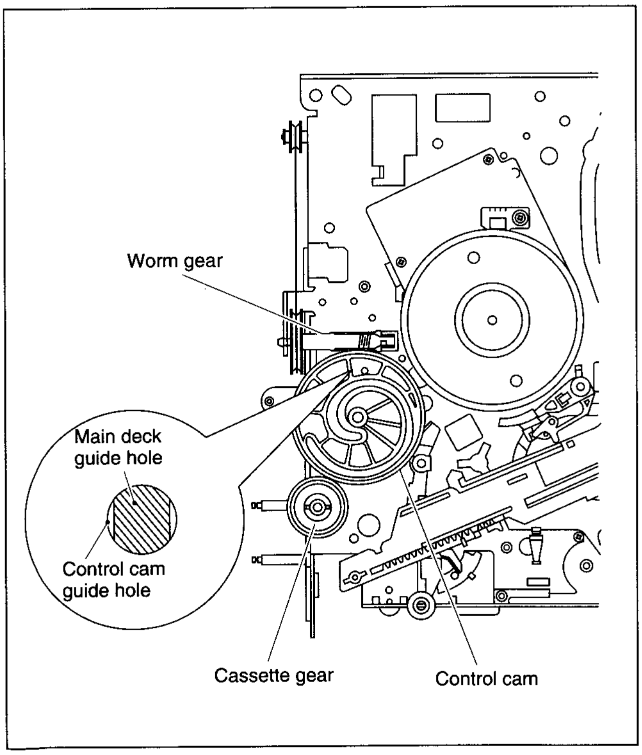

Worm gear
Main deck guide hole
Control cam guide hole
Cassette gear
Control cam

Fig. 2-2-27

2.2.14 Cassette Gear, Control Cam and Worm Gear

1. How to remove

(1) Remove the control cam by lifting it.

(2) Open the two lugs of the cassette gear outward and pull the latter off.

(3) Remove the belt wound around the worm gear and the loading motor.

(4) Open the lug of the lid guide outward and remove the worm gear.

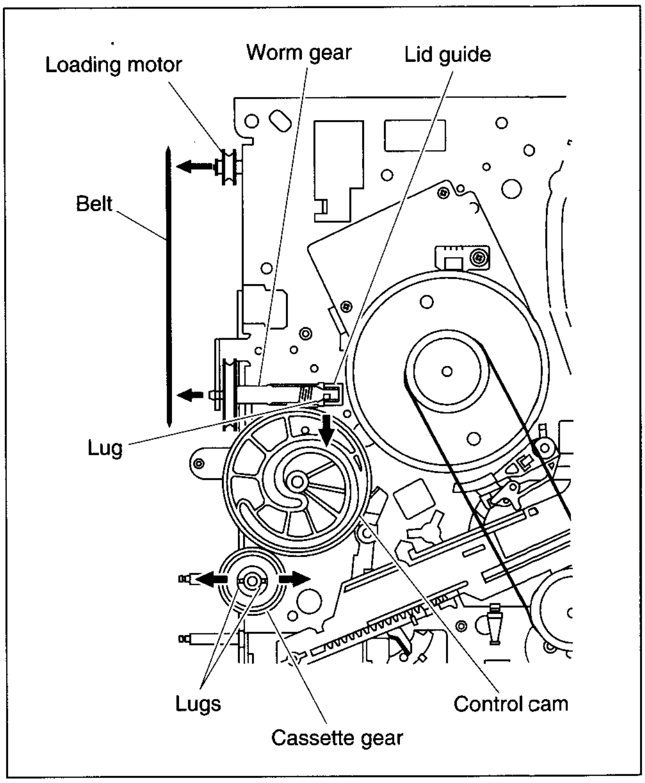

Loading motor
Worm gear
Lid guide
Belt
Lug
Lugs
Control cam
Cassette gear

Fig. 2-2-28

2.2.15 Control Plate

1. How to remove

(1) Remove the screw (A) retaining the control bracket 1 and remove the latter.

(2) Slide the control plate as indicated by the arrow and remove the control plate. (See Fig.2-2-29.)

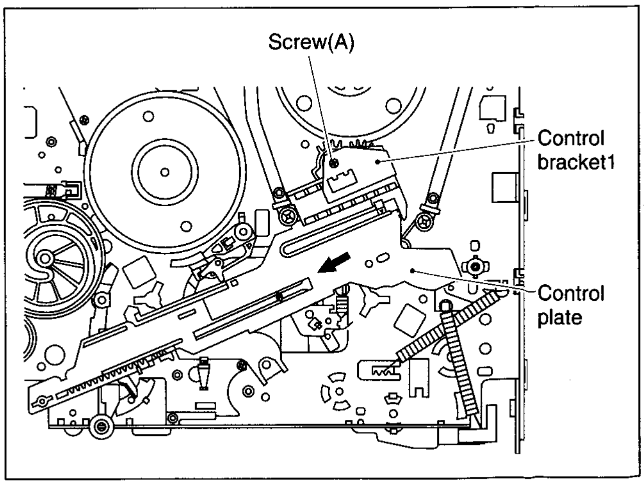

Screw(A)
Control bracket1
Control plate

Fig. 2-2-29

2. How to install (Phase matching)

(1) Adjust the position of the idler arm assembly pin as indicated in Fig.2-2-30 (to the left of center of the R section).

(2) Bring the guide hole of the take-up lever into alignment with the hole at the control plate guide and fix the position by inserting a 1.5 mm hexagonal wrench.

(3) Install the control plate so that the section A of the loading arm gear shaft fits into the hole (A) of the control plate, the section B of the control plate guide into the hole (B), and the control plate comes under the section C of the rotary encoder guide and the section D of the loading arm gear shaft while press-fit the pole base assmeby (supply side) as indicated by the arrow. It is important that the tension arm assembly shaft is positioned closer toward you than the control plate. (See Fig.2-2-31.)

(4) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft. (See Fig.2-2-31.)

(5) Pull off the hexagonal wrench for positioning.

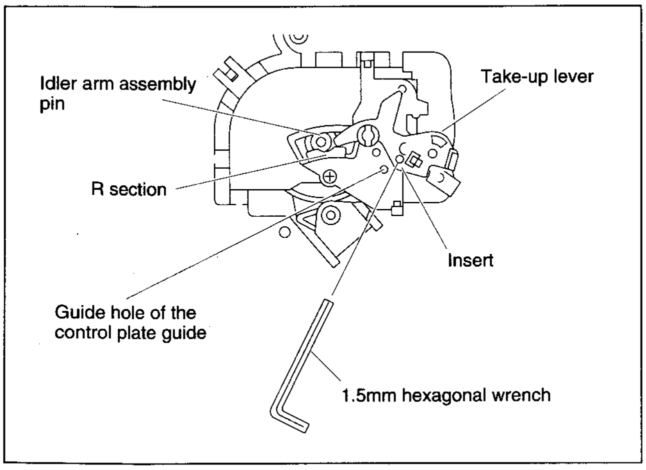

Idler arm assembly pin
Take-up lever
R section
Insert
Guide hole of the control plate guide
1.5mm hexagonal wrench

Fig. 2-2-30

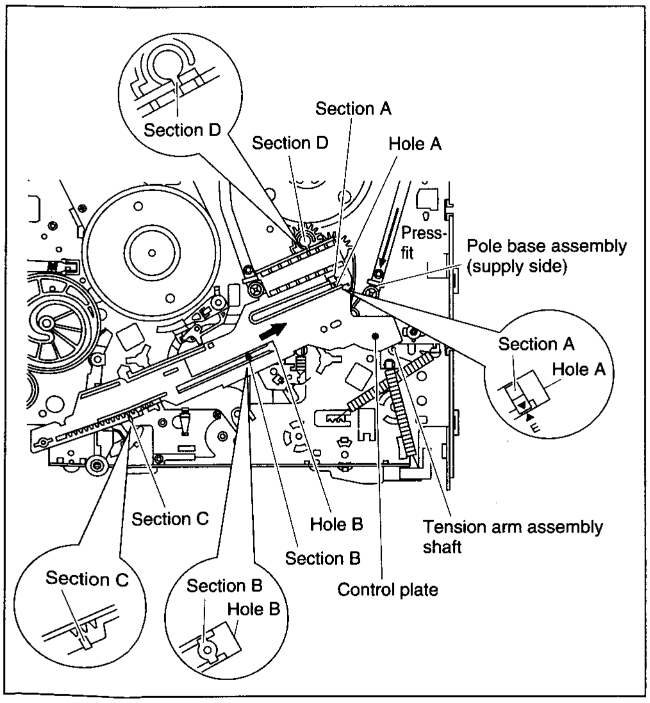

Section D
Section A
Section D
Hole A
Press-fit
Pole base assembly (supply side)
Section A
Hole A
E
Section C
Hole B
Section B
Tension arm assembly shaft
Control plate
Section C
Section B
Hole B

Fig. 2-2-31

2.2.16 Loading Arm Gear (supply or take-up side) and Loading Arm Gear Shaft

1. How to remove

(1) Remove the loading arm gear (supply side) by loosening the screw (A). (See Fig. 2-2-32.)

(2) Remove the screw (B) and remove the torsion arm from the pole base assembly (take-up side). (See Fig.2-2-32.)

(3) Turn the loading arm gear (take-up side) clockwise so that the notch of the loading arm gear (take-up side) is in alignment with the projection of the loading arm gear shaft and lift it.
Likewise, turn the loading arm counterclockwise so that the notch is in alignment with the projection and remove the loading arm gear (take-up side). (See Fig.2-2-32 and Fig. 2-2-33.)

(4) When removing the loading arm gear shaft, be sure of first removing the screw retaining the drum assembly (on the back side of the loading arm gear shaft). Then remove the screw (C) and remove the loading arm gear shaft by sliding it.

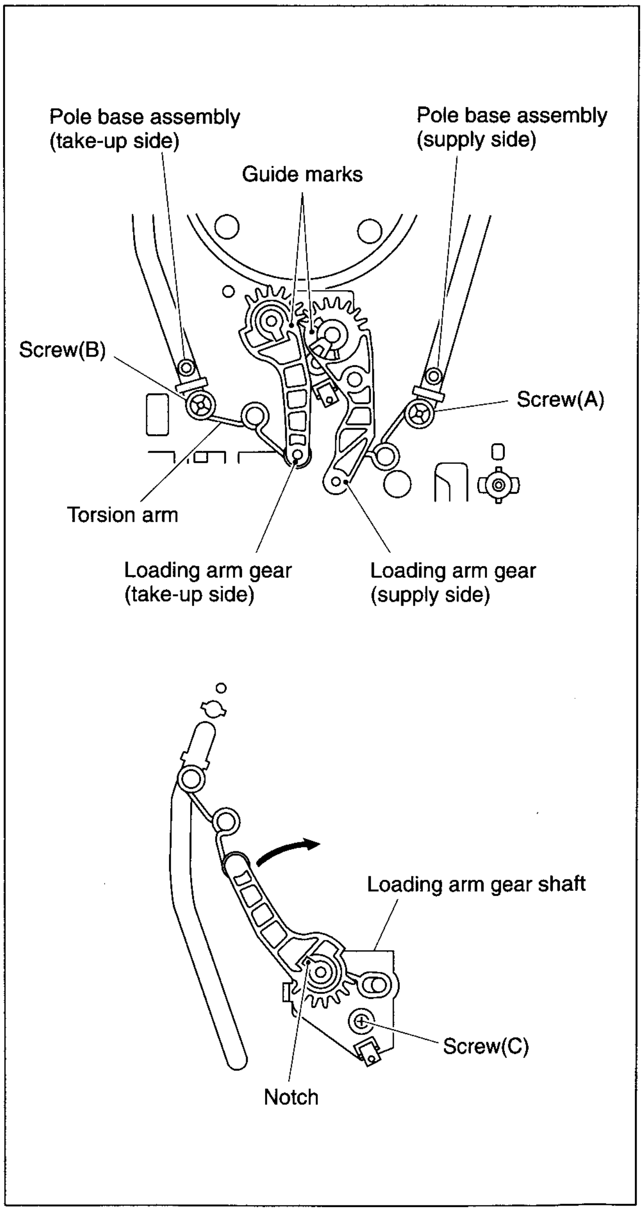

Pole base assembly (take-up side)
Pole base assembly (supply side)
Guide marks
Screw(B)
Screw(A)
Torsion arm
Loading arm gear (take-up side)
Loading arm gear (supply side)
Loading arm gear shaft
Screw(C)
Notch

Fig. 2-2-32

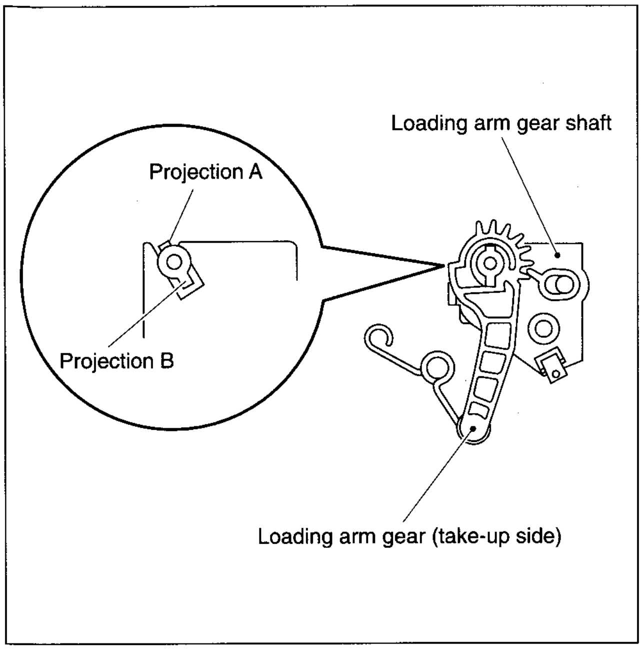

Loading arm gear shaft
Projection A
Projection B
Loading arm gear (take-up side)

Fig. 2-2-33

2. How to install

(1) Align the notch of the loading arm gear (take-up side) to the projection B of the loading arm gear shaft and slip it over. Then rotate it clockwise for alignment with the projection A and slip it down to the bottom. (See Fig.2-2-33.)

(2) Then turn the loading arm gear (take-up side) counterclockwise. Hang the torsion arm on the pole base assembly (take-up side) and tighten the screw (B).

(3) Install the loading arm gear (supply side) so that the guide mark of the loading arm gear (take-up side) is in alignment with the guide mark of the loading arm gear (supply side). Then hang the torsion arm on the pole base assembly (supply side) and tighten the screw (A). (See Fig.2-2-32.)

2.2.17 Take-up Lever, Take-up Head and Control Plate Guide

(1) Remove the spring of the take-up lever from the main deck.

(2) Remove the lug (A) of the take-up lever from the main deck and pull out the take-up lever and the take-up head together.

(3) Remove the screw (A).

(4) Align the idler arm assembly pin in the center of the R section of the control plate guide, remove the control plate guide lugs (B) and (C) from the main deck, and remove the control plate guide.

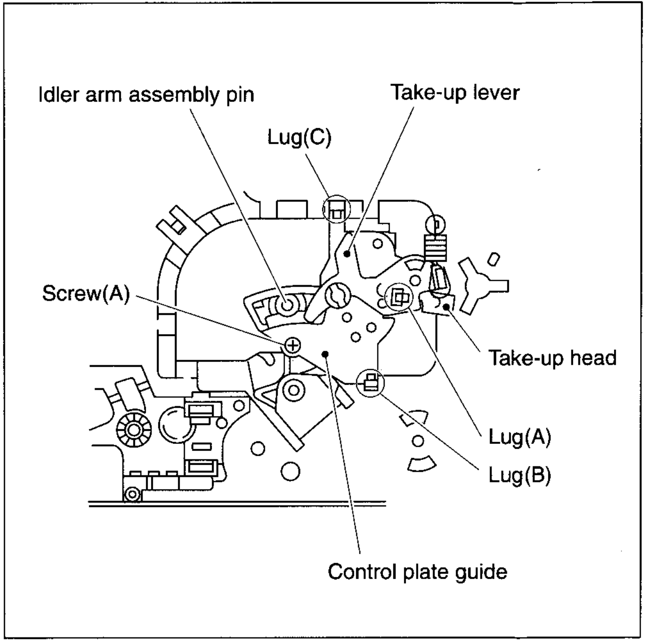

Idler arm assembly pin
Take-up lever
Lug(C)
Screw(A)
Take-up head
Lug(A)
Lug(B)
Control plate guide

Fig. 2-2-34

2.2.18 Capstan Brake Assembly

1. How to remove

(1) Move the lug (A) of the capstan brake assembly in the arrow-indicated direction so that it comes into alignment with the notch of the main deck. (See Fig. 2-2-35.)

(2) Remove the lug (B) of the capstan brake assembly from the main deck and remove the capstan brake assembly.

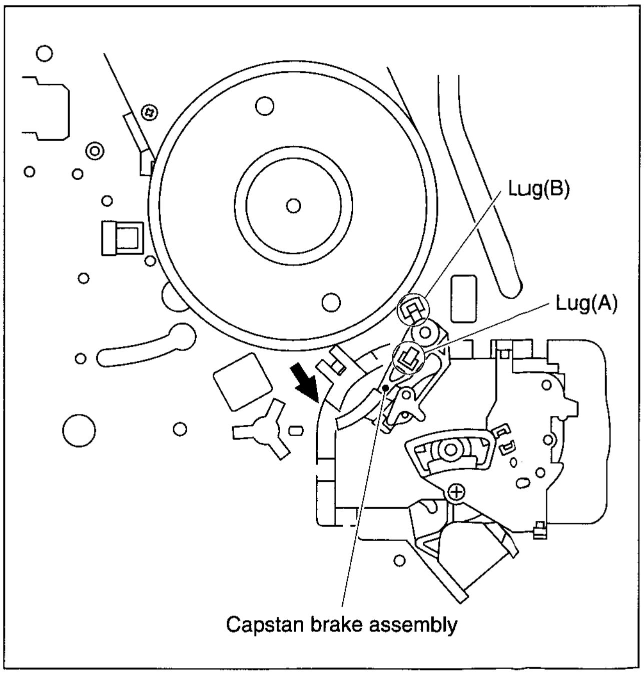

Lug(B)
Lug(A)
Capstan brake assembly

Fig. 2-2-35

2.2.19 Sub Brake Assembly (take-up side)

1. How to remove

(1) Remove the spring attached to the lid guide and sub brake assembly (take-up side).

(2) Bring the lug (A) of the sub brake assembly (take-up side) into alignment with the notch of the main deck.

(3) Remove the lugs (B) and (C) of the sub brake assembly (take-up side) from the main deck and remove the sub brake assembly (take-up side).

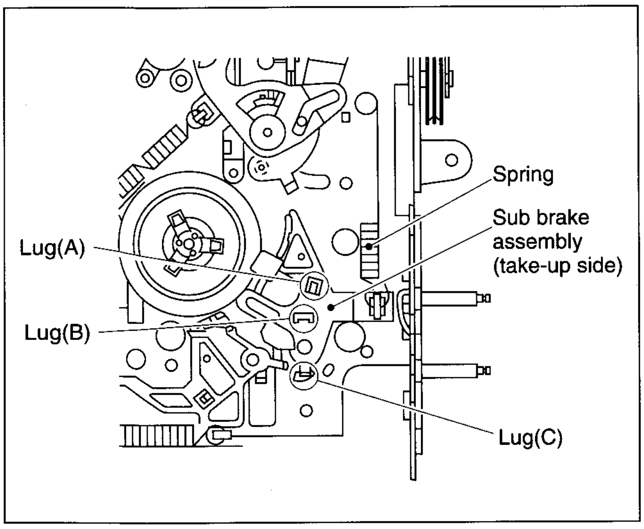

Spring
Sub brake assembly (take-up side)
Lug(A)
Lug(B)
Lug(C)

Fig. 2-2-36

2.2.20 Main Brake Assembly (take-up side), Reel Disk (take-up side) and Main Brake Assembly (supply side)

1. How to remove

(1) Move the main brake assembly (take-up side) in the arrow-indicated direction and remove the reel disk (take-up side).

(2) Remove the spring attached to the main brake assembly.

(3) Remove the lug (A) of the main brake assembly (take-up side) and pull out the lug (B) after bringing it into alignment with the main deck notch.

(4) Remove the lugs (C), (D) and (E) of the main brake assembly (supply side) from the main deck and pull them off. (See Fig.2-2-37.)

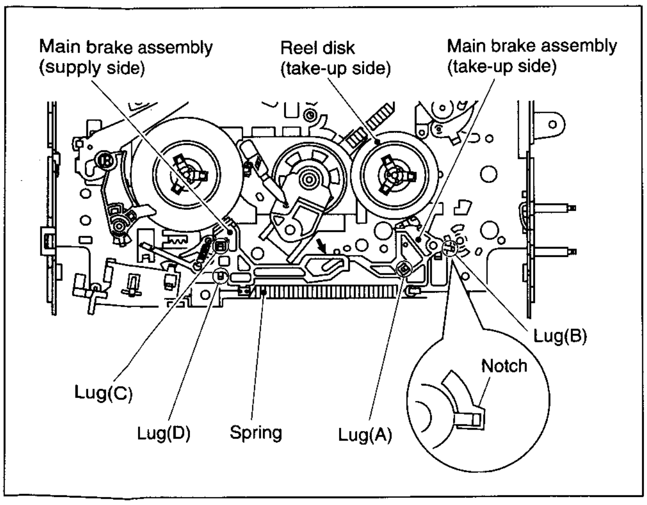

Main brake assembly (supply side)
Reel disk (take-up side)
Main brake assembly (take-up side)
Lug(B)
Notch
Lug(C)
Lug(D)
Spring
Lug(A)

Fig. 2-2-37

(5) When installing the main brake assembly (take-up side), slide the brake lever in the direction as indicated by the arrow to prevent it from hitting the projection of the main brake assembly (take-up side). (See Fig.2-2-38.)

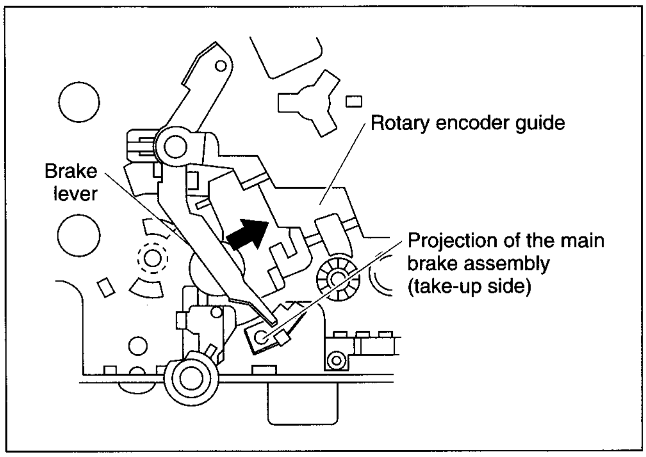

Rotary encoder guide
Brake lever
Projection of the main brake assembly (take-up side)

Fig. 2-2-38

2.2.21 Tension Brake Assembly, Reel Disk (supply side) and Tension Arm Assembly

1. How to remove

(1) Remove the three lugs of the tension brake assembly from the main deck and pull them off.

(2) Remove the reel disk (supply side) by loosening in the arrow-indicated direction the main brake assembly (supply side).

(3) Remove the tension spring on the back of the main deck. Then release the lug of the tension arm bearing in the arrow-indicated direction and draw out the tension arm assembly. (See Fig. 2-2-39.)

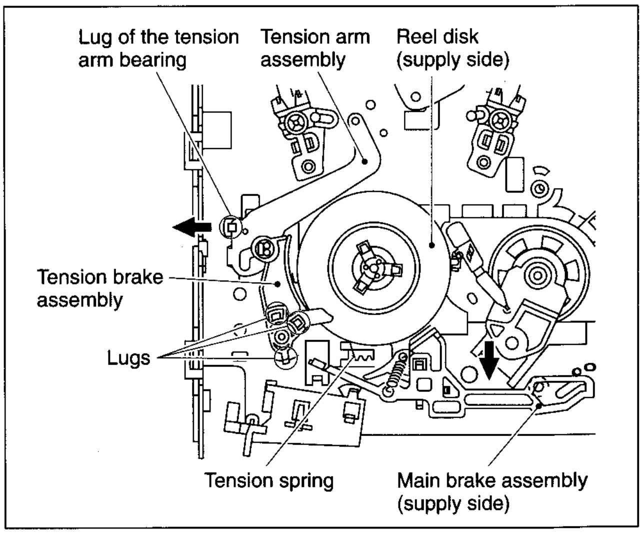

Lug of the tension arm bearing
Tension arm assembly
Reel disk (supply side)
Tension brake assembly
Lugs
Tension spring
Main brake assembly (supply side)

Fig. 2-2-39

2.2.22 Idler Lever, Idler Arm Assembly

1. How to remove

(1) Remove the lug of the idler lever from the main deck and remove the hook fitted in the idler arm assembly hole by lifting it.

(2) Remove the slit washer and pull out the idler arm assembly.

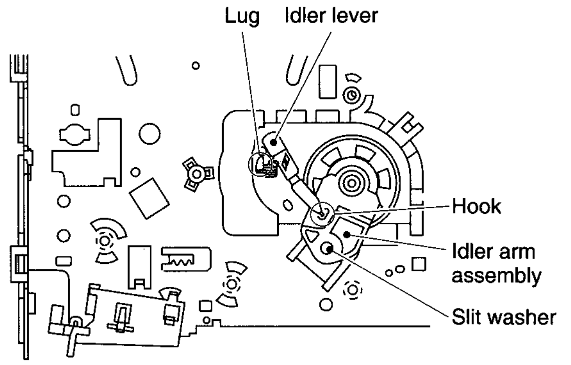

Lug
Idler lever
Hook
Idler arm assembly
Slit washer

Fig. 2-2-40

2.2.23 Stator Assembly

(1) Remove the flat cable.

(2) Remove the two screws (A).

(3) Remove the stator assembly by lifting in the arrow-indicated direction. (Take care that the brush spring does not jump out.)

(4) After installation, be sure to perform the PB switching point adjustment according to the electrical adjustment procedure.

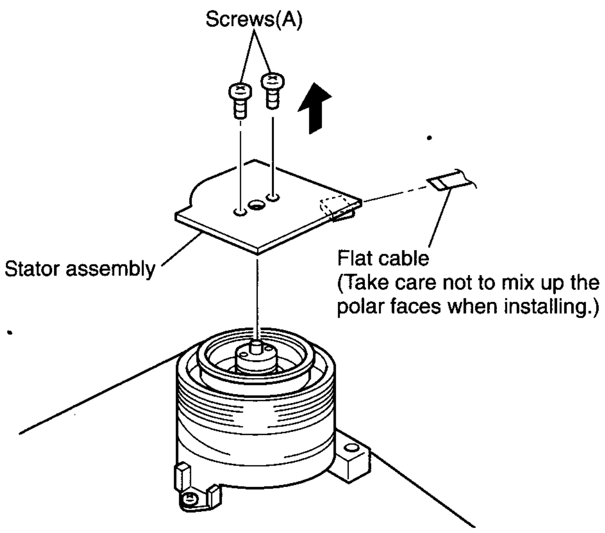

Screws(A)
Stator assembly
Flat cable
(Take care not to mix up the polar faces when installing.)

Fig. 2-2-41

2.2.24 Rotor Assembly

(1) Remove the stator assembly.

(2) Remove the two screws (B) and remove the rotor assembly.

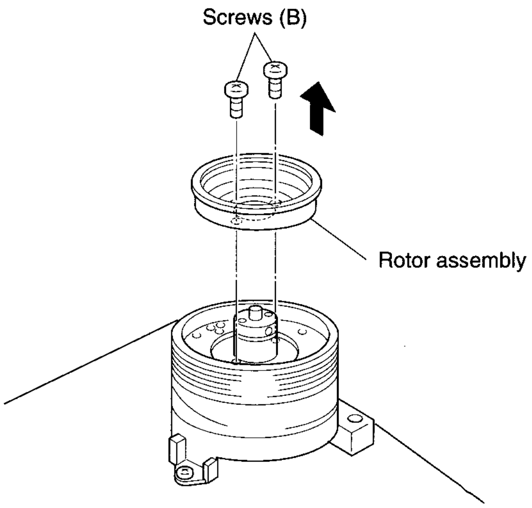

Screws (B)
Rotor assembly

Fig. 2-2-42

Note: *When installing the rotor assembly, note that a normal picture cannot be obtained without ensuring the phase matching as mentioned below.*

(3) Match the phases of the upper drum assembly and the rotor assembly as indicated in Fig.2-2-43.

(4) Place the upper drum assembly hole (a) over the rotor assembly holes (b) (with three holes to be aligned) and tighten the two screws (B). (See Fig.2-2-43.)

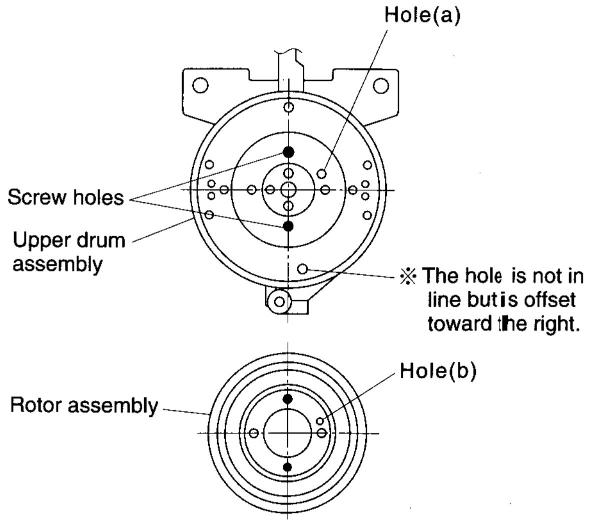

Hole(a)
Screw holes
Upper drum assembly
※ The hole is not in line but is offset toward the right.
Hole(b)
Rotor assembly

Fig. 2-2-43

2.2.25 Upper Drum Assembly

1. How to remove

(1) Remove the stator assembly and rotor assembly.
(2) Loosen the screw of the collar assembly using a 1.5 mm hexagonal wrench and remove the collar assembly. Also remove the brush, spring and cap at one time.
(3) Remove the upper drum assembly and remove the washer using tweezers.

Note: *When replacement is required, control the up-down movement of the brush. Never apply grease.*

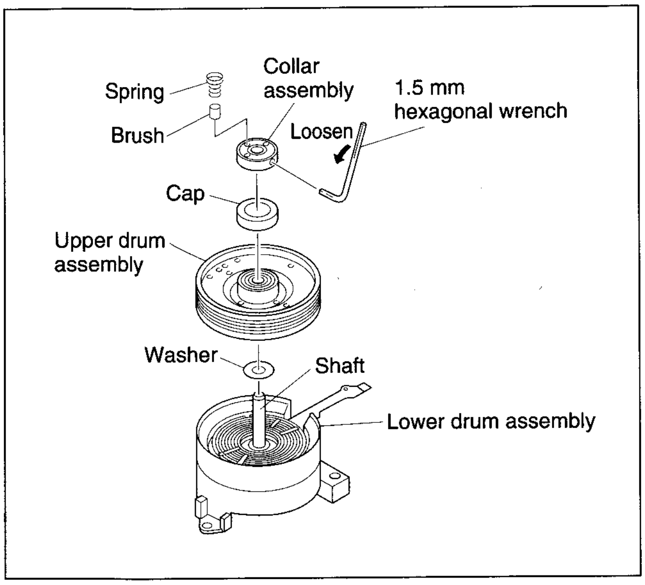

Spring
Collar assembly
1.5 mm hexagonal wrench
Brush
Loosen
Cap
Upper drum assembly
Washer
Shaft
Lower drum assembly

Fig. 2-2-44

2. How to install

(1) Clean the coil parts of the lower drum assembly and the newly installed upper drum assembly with an air brush in advance. (See Fig.2-2-45.)
(2) Install a new washer and upper drum assembly on the drum shaft. (See Fig.2-2-44.)

Note: *When replacing the upper drum assembly, replace it the together with the washer.*

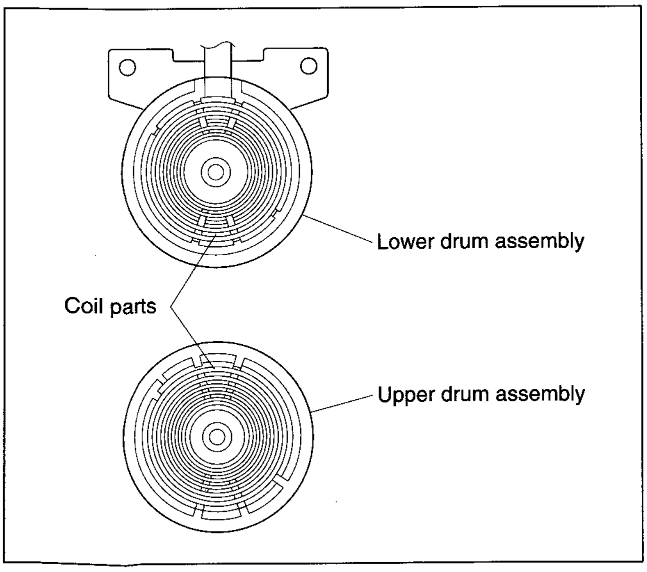

Lower drum assembly
Coil parts
Upper drum assembly

Fig. 2-2-45

(3) Install the cap to the upper drum assembly.
(4) Position the collar assembly as indicated in Fig.2-2-46 while controlling its up- down movement.

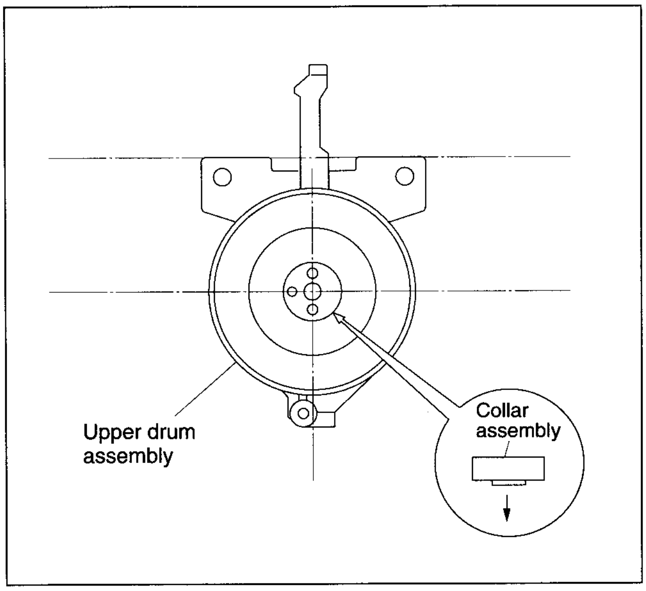

Upper drum assembly
Collar assembly

Fig. 2-2-46

(5) Secure the collar assembly in position with a hexagonal wrench while pressing its top with the fingers.

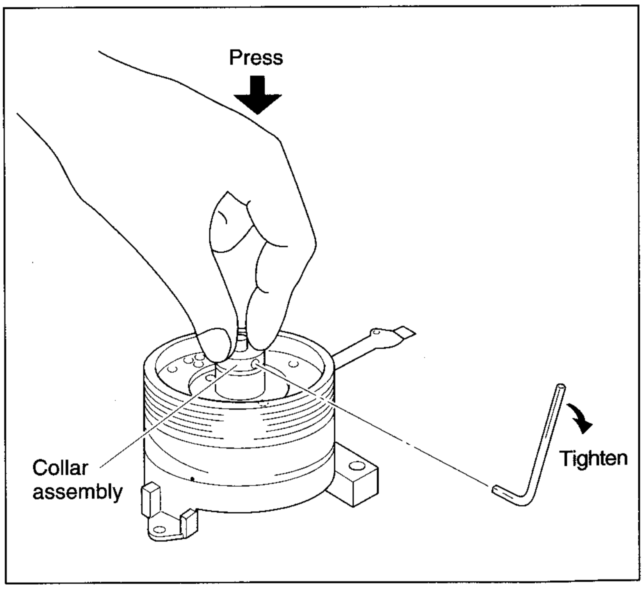

Press
Collar assembly
Tighten

Fig. 2-2-47

(6) After installation, gently turn the upper drum assembly with your hand to make sure that it turns normally. Then install the brush and the spring.
(7) Install the rotor assembly and stator assembly according to Fig 2-2-41 and 2-2-42.
(8) When installation is complete, clean the upper drum assembly and lower drum assembly and carry out the following adjustments.
   - PB switching point adjustment
   - Slow tracking adjustment
   - Compatibility adjustment (Be sure to check for compatibility for the EP (or LP) mode.)

2.3 COMPATIBILITY ADJUSTMENT

Notes:

- *Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the audio control head, drum assembly or any part of the tape transport system.*
- *To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.*
- *Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.*
- *When using the Jig RCU, set its custom code to match the custom code of the VCR.*

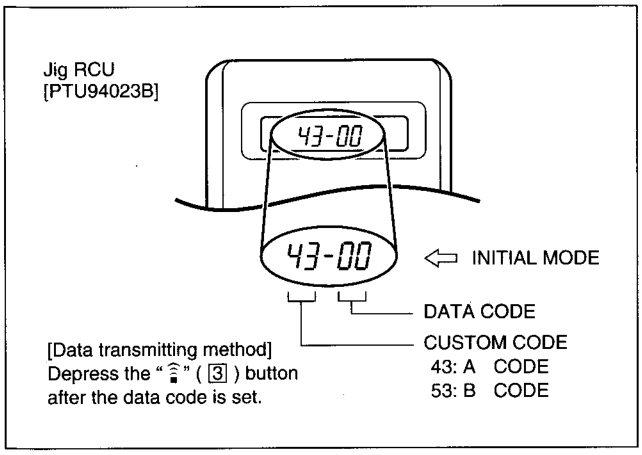


Fig. 2-3-1 Jig RCU

2.3.1 Checking/Adjustment of FM Waveform Linearity

Signal (A1) (A2)	• Alignment tape [MHPE] • Alignment tape [MHPE-L]
Mode (B)	• PB
Equipment (C)	• Oscilloscope
Measuring point (D)	• TP106 (PB. FM)
External trigger (E)	• TP111 (D.FF)
Adjustment part (F)	• Guide roller [Mechanism assembly]
Specified value (G)	• Flat V.PB FM waveform
Adjustment tool (H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).

(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).

(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).

(4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 2-3-2.)

(5) Reduce the V.PB FM waveform while pressing the channel buttons (+, –) during playback. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 2-3-4.)

(6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).

(7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.

(8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 2-3-5.)

[Perform step (9) adjustment only for the models equipped with SP mode and EP (or LP) mode.]

(9) Repeat steps (1) to (8) by using the alignment tape (A2).

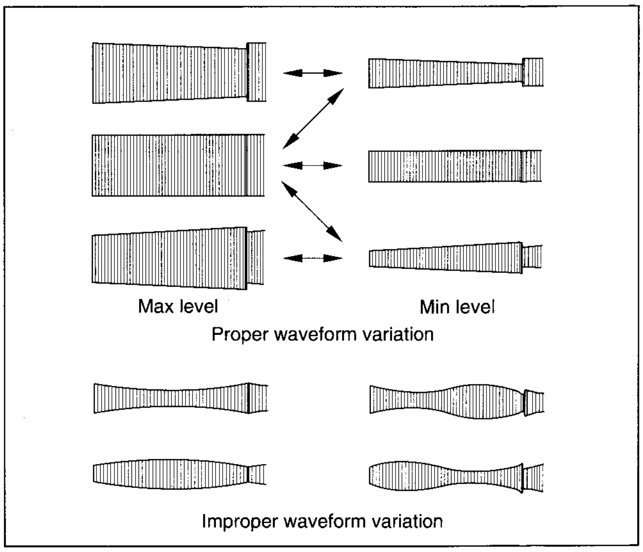


Fig. 2-3-2

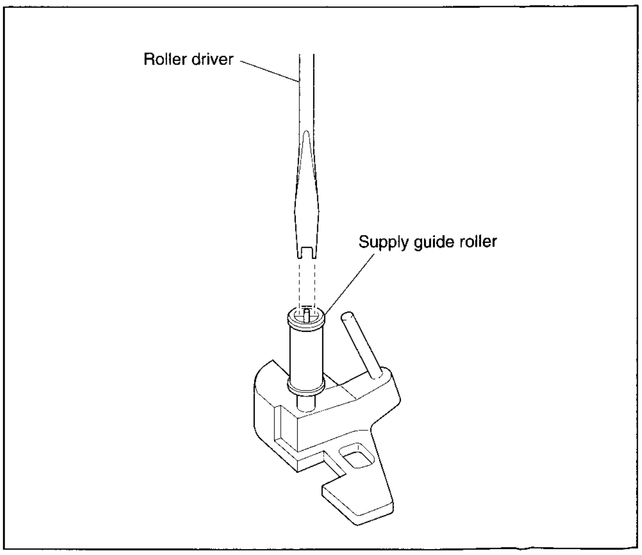


Fig. 2-3-3

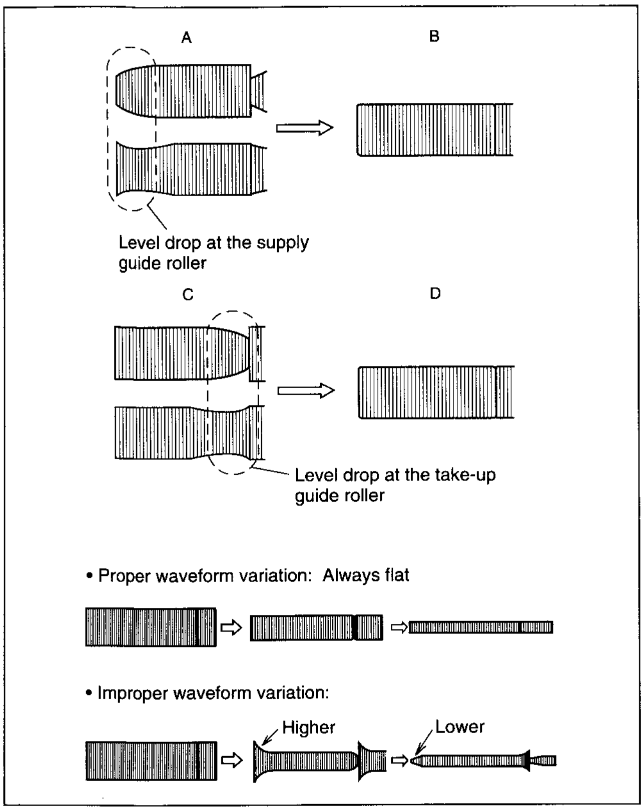

A
B
Level drop at the supply guide roller
C
D
Level drop at the take-up guide roller
• Proper waveform variation: Always flat
• Improper waveform variation:
Higher
Lower

Fig. 2-3-4

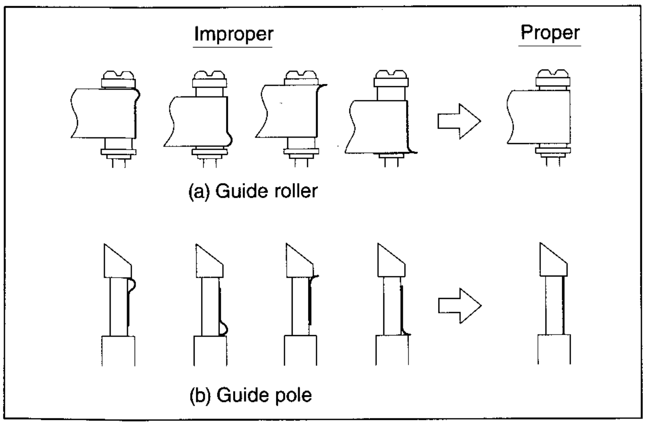

Improper
Proper
(a) Guide roller
(b) Guide pole

Fig. 2-3-5

2.3.2 Checking/Adjustment of the Height and Tilt of the Audio Control Head

Note:

- *Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See Fig.2-2-15.)*

Signal (A)	• Alignment tape [MHPE]
Mode (B)	• PB
Equipment (C)	• Oscilloscope
Measuring point (D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger (E)	• TP111 (D.FF)
Adjustment part (F)	• A/C head [Mechanism assembly]
Specified value (G)	• Maximum waveform

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

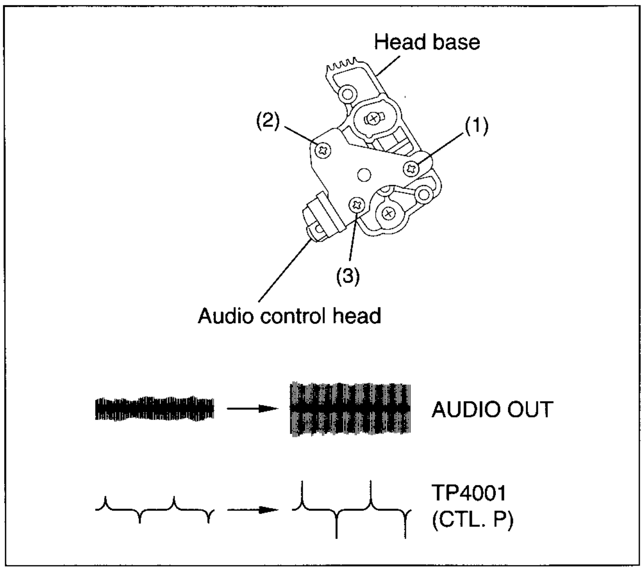

Head base
(2)
(1)
(3)
Audio control head
AUDIO OUT
TP4001
(CTL. P)

Fig. 2-3-6

2.3.3 Checking/Adjustment of the Audio Control Head Phase (X-Value)

Signal (A1) (A2)	• Alignment tape [MHPE] • Alignment tape [MHPE-L]
Mode (B)	• PB
Equipment (C)	• Oscilloscope
Measuring point (D)	• TP106 (PB. FM)
External trigger (E)	• TP111 (D.FF)
Adjustment part (F)	• A/C head base [Mechanism assembly]
Specified value (G)	• Maximum V.PB FM waveform
Adjustment tool (H)	• A/C head positioning tool [PTU94010]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Loosen the screws (4) and (5), then set the A/C head positioning tool to the innermost projected part of the A/C head. (See Fig. 2-3-7.)
(5) Turn the A/C head positioning tool fully toward the capstan. Then turn it back gradually toward the drum and stop on the second peak point position of the V.PB FM waveform output level. Then tighten the screws (4) and (5).

[Perform steps (6) to (9) adjustments only for 2 Heads LP mode models.]

(6) Then play back the alignment tape (A2).
(7) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(8) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
(9) If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

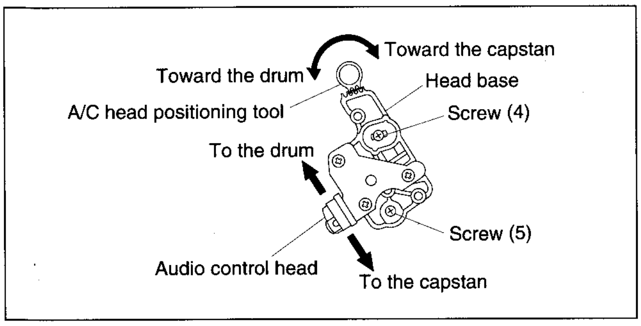

Toward the capstan
Toward the drum
Head base
A/C head positioning tool
Screw (4)
To the drum
Screw (5)
Audio control head
To the capstan

Fig. 2-3-7

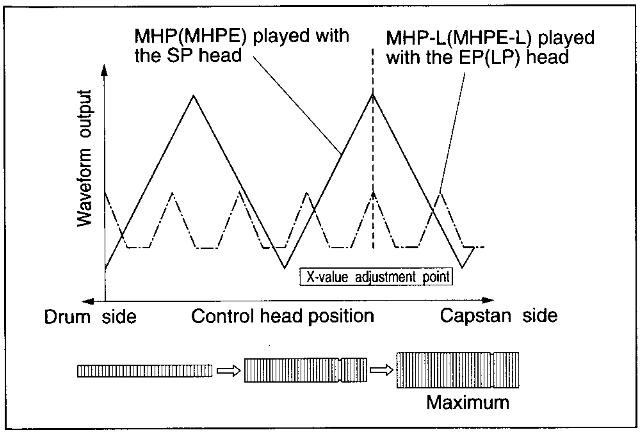


Fig. 2-3-8

2.3.4 Checking/Adjustment of the Standard Tracking Preset

Signal	(A)	• Alignment tape [MHPE-L]
Mode	(B)	• PB → Auto adjust
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code "50"
Specified value	(G)	• STOP mode (Maximum V.PB FM waveform)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Confirm that the automatic tracking operation is completed.
(4) Set the VCR to the Auto adjust mode by transmitting the code (F) twice from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
(5) If the VCR enters the eject mode, perform adjustment for the audio control head phase (X-value) again.

2.3.5 Checking/Adjustment of the Tension Pole Position

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B)	• PB
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm (2.45 – 5 x 10^{-3} N•m]

(1) Play back the back tension cassette gauge (A).
(2) Check that the indicated value on the left side gauge is within the specified value (G).
(3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.
  1) Set the VCR to the mechanism service mode. (See 1.5 MECHANISM SERVICE MODE.)
  2) Set the VCR to the play back mode and adjust by turning adjustment pin to align the tension arm assembly edge with the main deck hole (A) on the right edge marker. (See Fig. 2-3-9)

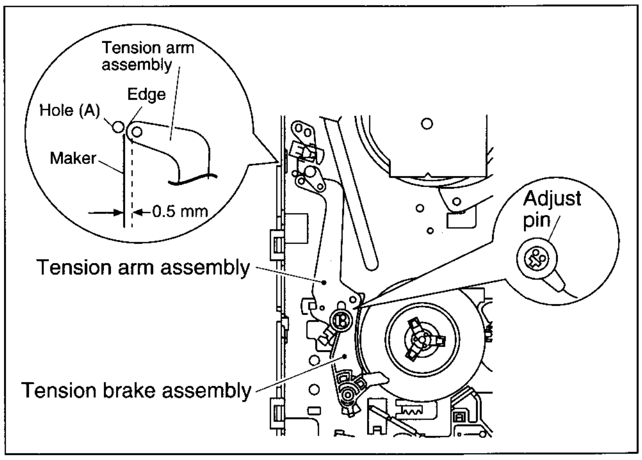
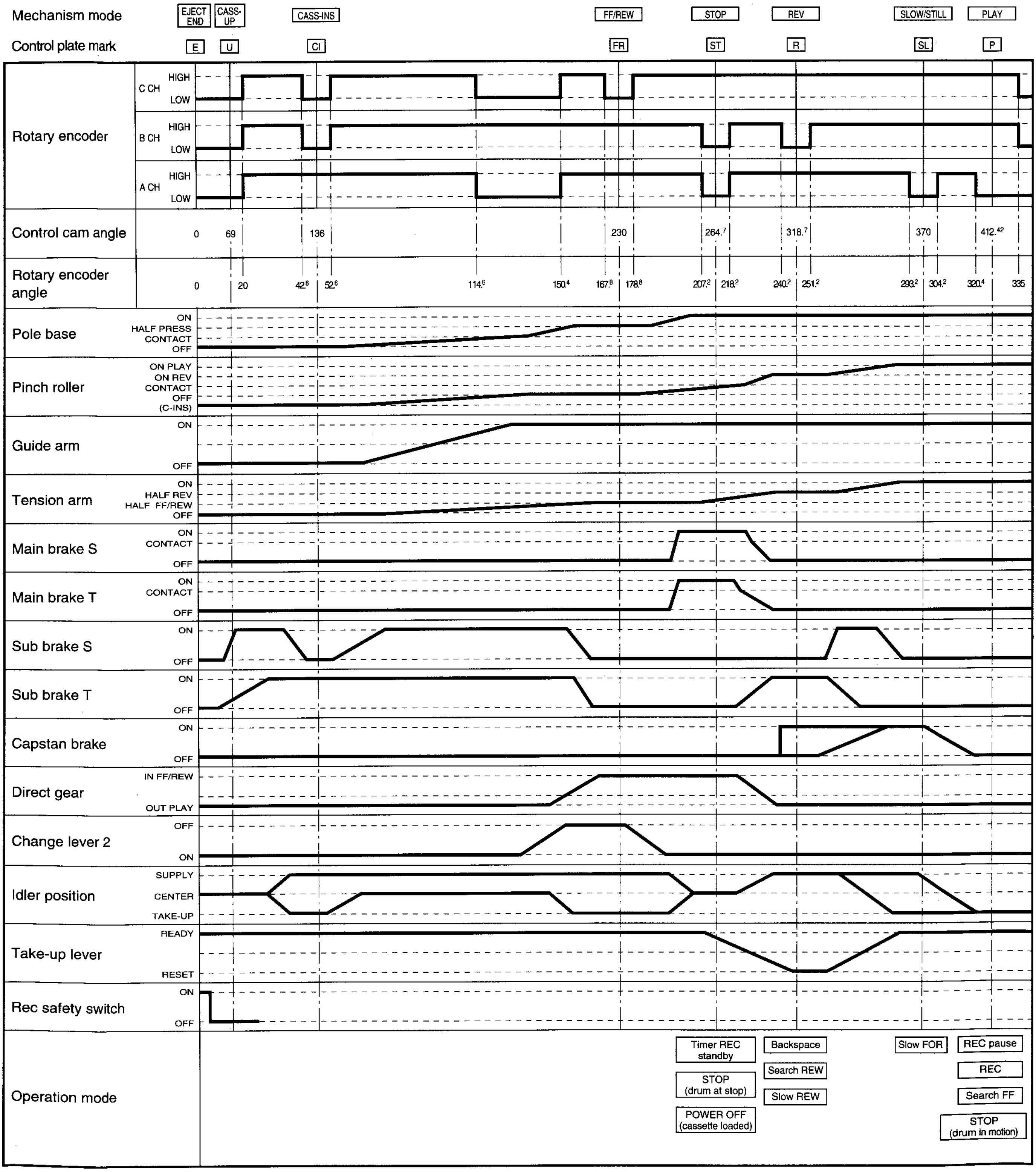

Tension arm assembly
Edge
Hole (A)
Maker
0.5 mm
Adjust pin
Tension arm assembly
Tension brake assembly

Fig. 2-3-9

Mechanism Timing Chart


Mechanism mode
EJECT END
CASS-UP
CASS-INS
FF/REW
STOP
REV
SLOW/STILL
PLAY
Control plate mark
E
U
CI
FR
ST
R
SL
P
Rotary encoder
C CH
B CH
A CH
HIGH
LOW
Control cam angle
0
69
136
230
264.7
318.7
370
412.42
Rotary encoder angle
0
20
42^{6}
52^{6}
114^{6}
150^{4}
167^{8}
178^{8}
207^{2}
218^{2}
240^{2}
251^{2}
293^{2}
304^{2}
320^{4}
335
Pole base
ON
HALF PRESS
CONTACT
OFF
Pinch roller
ON PLAY
ON REV
CONTACT
OFF
(C-INS)
Guide arm
ON
OFF
Tension arm
ON
HALF REV
HALF FF/REW
OFF
Main brake S
ON
CONTACT
OFF
Main brake T
ON
CONTACT
OFF
Sub brake S
ON
OFF
Sub brake T
ON
OFF
Capstan brake
ON
OFF
Direct gear
IN FF/REW
OUT PLAY
Change lever 2
OFF
ON
Idler position
SUPPLY
CENTER
TAKE-UP
Take-up lever
READY
RESET
Rec safety switch
ON
OFF
Operation mode
Timer REC standby
STOP (drum at stop)
POWER OFF (cassette loaded)
Backspace
Search REW
Slow REW
Slow FOR
REC pause
REC
Search FF
STOP (drum in motion)

SECTION 3
ELECTRICAL ADJUSTMENT

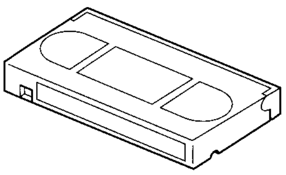
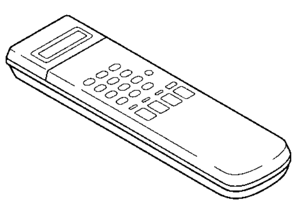
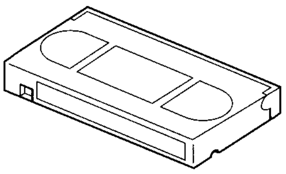
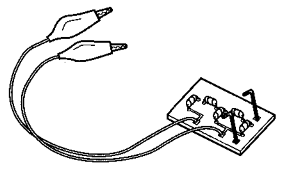
3.1 PRECAUTION

The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.
In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.1.1 Required test equipments

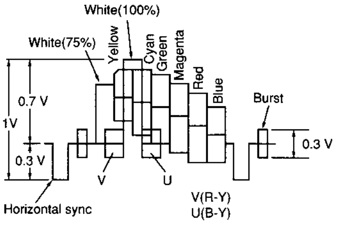
- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Frequency counter
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL]
- Recording tape
- Digit-key remote controller(provided)

3.1.2 Required adjustment tools

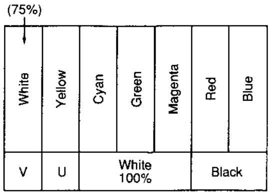
Alignment tape(SP, stairstep, PAL) MHPE Alignment tape(SP, stairstep, NTSC) MHP	Jig RCU PTU94023B
	
Alignment tape (S-VHS, SP/LP, color (colour) bar) MH-2H	LPF PTU93006
	

3.1.3 Color (colour) bar signal,Color (colour) bar pattern

- **Colour bar signal [PAL]**



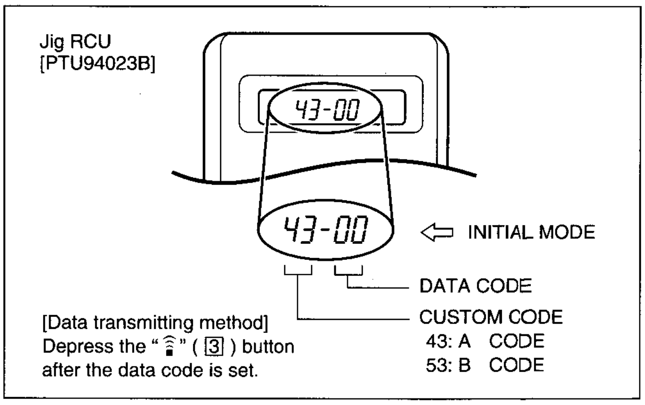
- **Colour bar pattern [PAL]**



3.1.4 Switch settings and standard precautions

The SW settings of the VCR and the standard precautions for the electrical adjustments are as follows.

- *When using the Jig RCU, set its custom code to match the custom code of the VCR.*



[Data transmitting method]
Depress the "⇡" (3) button after the data code is set.

Fig. 3-1-4a Jig RCU

- *Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired. If the VCR is not equipped with the functions detailed below, setup is not required.*

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON

- *Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.*
- *In the Signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input means the composite video signal input.*

3.1.5 EVR Adjustment

Some of the electrical adjustments require the adjustment performed by the EVR system. The Main board assembly have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- *In the EVR adjustment mode, the value is varied with the channel buttons (+, –). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.*
- *When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input.*
  The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- *As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.*
- *When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.*

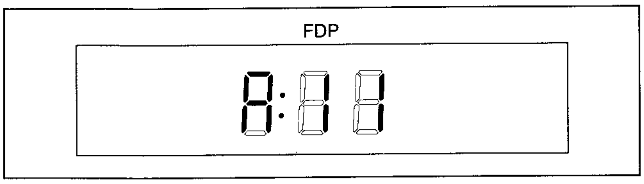


Fig. 3-1-5a EVR mode

3.2 SERVO CIRCUIT

3.2.1 Switching point

Signal	(A1) (A2) (A3)	• Stairstep signal • Alignment tape [MHPE] • Alignment tape [MHP]
Mode	(B)	• PB • TBC: OFF
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal • TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)/slope : –
Adjustment part	(F1) (F2)	• Jig RCU: Code "5A" • Jig RCU: Code "51" or "52"
Specified value	(G1) (G2)	• 7.5 ±0.5H • 8.0 ±0.5H [MHPE] • 7.5 ±0.5H [MHP]
Adjustment tool	(H)	• Jig RCU [PTU94023B]

[HR-S6700EK / S6700EU]

(1) Play back the signal (A1) of the alignment tape (A2).
(2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes maximum.
(5) Set the VCR to the Auto adjust mode by transmitting the code (F1) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
(6) If the VCR enters the eject mode, repeat steps (1) to (5) again.
(7) Play back the alignment tape (A2) again, confirm that the switching point is the specified value (G1).

[HR-S7700EK / S7700EU]

(1) Play back the signal (A1) of the alignment tape (A2).
(2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Adjust tracking by pressing the channel buttons (+, -) so that the V.PB FM waveform becomes maximum.
(5) Transmit the code (F2) from the Jig RCU to adjust so that the trigger point of the VIDEO OUT waveform is changed from the trailing edge of the V.sync signal becomes the specified value (G2).
(6) Set the VCR to the stop mode or eject mode.
(7) Play back the signal (A1) of the alignment tape (A3).
(8) Repeat steps (2) to (6).

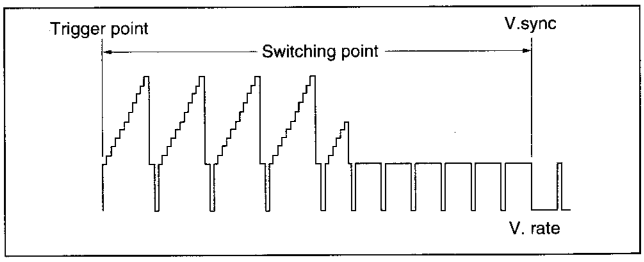


Fig. 3-2-1a Switching point

3.2.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• S-VHS SP • S-VHS LP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig RCU: Code "71" or "72"
Specified value	(G)	• Minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(2) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(3) Set the VCR to the FWD slow mode.
(4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
(5) Set the VCR to the Stop mode.
(6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
(7) Repeat steps (3) to (6) in the REV slow mode.
(8) Repeat steps (1) to (7) in the mode (B2).

Note:

- *For FWD slow playback, transmit the code "08" from the Jig RCU to enter the slow playback mode, and transmit the code "D0" for REV slow mode.*

3.3 VIDEO CIRCUIT

3.3.1 D/A level

Signal	(A1) (A2) (A3)	• Ext. S-input / Ext. input • Color (colour) bar signal [PAL] • S-VHS tape
Mode	(B)	• S-VHS • EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
Adjustment part	(F)	[HR-S6700EK / S6700EU] • VR1201 (DA Y LEVEL) [2D board] [HR-S7700EK / S7700EU] • VR1401 (DA Y LEVEL) [3D board]
Specified value (Note)	(G)	• 1.00 ± 0.015 Vp-p (reference value)

(1) Insert the cassette tape (A3) to enter the mode (B).
(2) Observe the Y OUT waveform at the measuring point (D).
(3) Check the Y level value when the External S-input (Y/C separated video signal).
(4) Switch the input signal to the External input (composite video signal), and adjust the adjustment part (F) so that the Y level becomes the same value observed in step (3).

Note:
- *The specified value (G) is just a reference value to be obtained when the External S-Video (Y/C separated video) signal is input. In actual adjustment, set it to the value observed in step (3).*

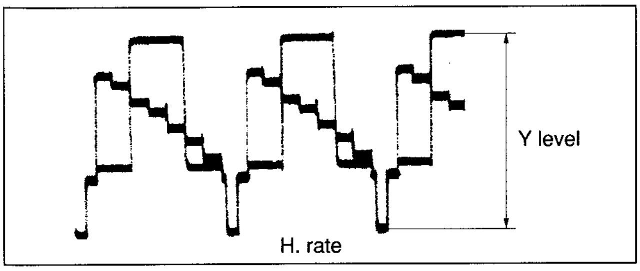


Fig. 3-3-1a D/A level

3.3.2 EE Y level

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code "57" • A:11 (Press remote controller "1" key twice)
Specified value	(G)	[HR-S6700EK / S6700EU] • 1.00 ±0.05 Vp-p [HR-S7700EK / S7700EU] • 1.00 ±0.03 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Observe the Y OUT waveform at the measuring point (D).
(2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(3) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(4) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the Y level of the Y OUT waveform becomes the specified value (G).
(5) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

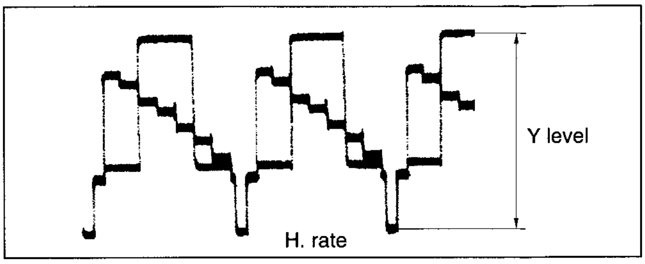


Fig. 3-3-2a EE Y level

3.3.3 PB Y level (S-VHS / VHS)

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code "57" • A:11 (Press remote controller "1" key twice)
Specified value	(G)	[HR-S6700EK / S6700EU] • 1.00 ±0.05 Vp-p [HR-S7700EK / S7700EU] • 1.00 ±0.03 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Observe the Y OUT waveform at the measuring point (D).
(2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(5) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(6) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the Y level of the Y OUT waveform becomes the specified value (G).
(7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(8) Repeat steps (2) to (7) in the mode (B2).

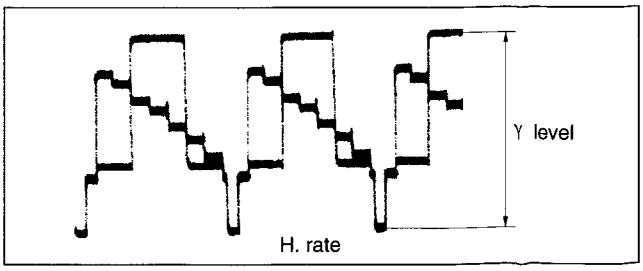


Fig. 3-3-3a PB Y level

3.3.4 REC color (colour) level

Signal	(A1) (A2) (A3)	• Alignment tape [MH-2H] • Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• TP106 (PB. FM) • PB color (colour) output of the LPF
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code "57" • A:02 (Press remote controller "0" and "2" keys)
Specified value	(G)	• SP: "B" x 125 ± 5% • LP: "B" x 125 ± 5%
Adjustment tool	(H1) (H2) (H3)	• Jig RCU [PTU94023B] • Digit-key remote controller • LPF[PTU93006] (See Fig. 3-3-4a.)

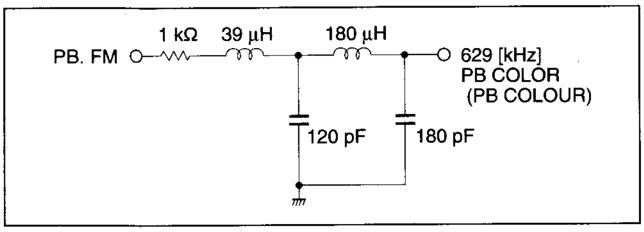


Fig. 3-3-4a LPF

(1) Connect the adjustment tool (H3) to the measuring point (D1).
(2) Apply the external trigger signal to D.FF (E) to observe the PB color (colour) waveform at the measuring point (D2).
(3) Play back the signal (A3) in the mode (B1) of the alignment tape (A1).
(4) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(5) Adjust tracking by pressing the channel buttons (+, –) so that the PB color (colour) waveform becomes maximum. Make a note of the higher PB color (colour) level as "B" at this time.
(6) Record the signal (A3) in the mode (B1), and play back the recorded signal.
(7) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(8) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(9) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the higher level channel becomes the specified value (G) of the note "B" level as shown in Fig. 3-3-4b. (Adjust before recording, then confirm it by playing back.)
(10) After adjustment, record the signal (A3) then playing it back again. At this time, confirm that there is no inverting phenomenon or noise appearing on the playback screen.
(11) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(12) Repeat steps (3) to (11) in the mode (B2).

Note:

- ***After adjusting, always perform the confirmation and re-adjustment of the item 3.4.1.***

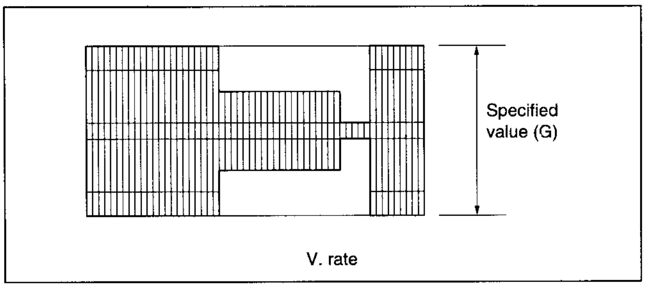


Fig. 3-3-4b REC color (colour) level

3.3.5 Video EQ (Frequency response)

Signal	(A1) (A2)	• Ext. S-input • Video sweep signal
Mode	(B1) (B2) (B3)	• S-VHS SP • S-VHS LP • Picture Control / Smart Picture REC : Normal / Natural PB : Edit / Distinct
Equipment	(C)	• Oscilloscope
Measuring point Frequency marker	(D1) (D2)	• Y OUT terminal (75Ω terminated) • 3 [MHz]
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code "57" • A:03 (Press remote controller "0" and "3" keys)
Specified value	(G)	• SP: 3.6 ±0.4 div. (-1 ±1 dB) • LP: 3.2 ±0.4 div. (-2 ±1 dB)
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Apply the external trigger signal to D.FF (E) to observe the Y OUT waveform at the measuring point (D1).
(2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(5) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(6) Set the slope of the oscilloscope to the channel having higher (D2) marker level of the Y OUT waveform [signal (A2)]. Then set the 100 kHz marker level to the "4" scale on the oscilloscope. In this condition, adjust with the channel buttons (+, -) on the VCR (or on the remote controller) so that the (D2) marker level reaches the specified value (G).
(7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(8) Repeat steps (2) to (7) in the mode (B2).

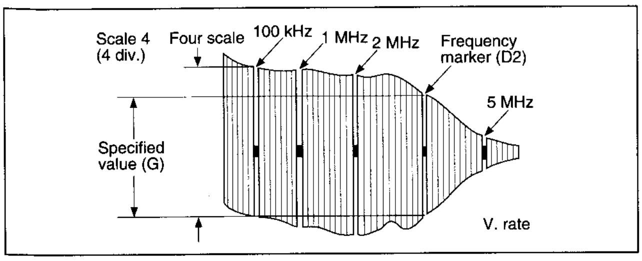


Fig. 3-3-5a Video EQ (Frequency Response)

3.3.6 AUTO PICTURE initial setting

Signal	(A1) (A2) (A3)	• Ext. input • Video: Optional • VHS tape
Mode	(B)	• EE → Auto adjust (SP/LP REC → PB)
Adjustment part	(F)	• Jig RCU : Code "58"
Specified value	(G)	• STOP mode
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Insert the cassette tape (A3).

(2) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed. When the VCR enters the eject mode, repeat steps (1) to (2) again.

3.4 AUDIO CIRCUIT

Notes:

- *This adjustment should be done after the "REC color (colour) level adjustment" for the video circuit has been completed.*
- *GND (Ground) should be taken from the Tuner shield case.*

3.4.1 Audio REC FM

Signal	(A1) (A2) (A3)	• Ext. input • Audio: No signal • Video: Color (colour) bar signal [PAL]
Mode	(B)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. PB. FM)
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code "57" • A: 30 (Press remote controller "3" and "0" keys.)
Specified value	(G1) (G2)	• 450 ±100 mVp-p • More than 300 mVp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).

(2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.

(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).

(4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.

(5) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.

(6) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.

(7) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the A.PB FM level of the higher channel level becomes the specified value (G1). (Adjust before recording, then confirm it by playing back.)

(8) If the specified value (G1) is not obtained, adjust with the channel buttons (+, –) so that the waveform level of the lower channel level becomes the specified value (G2). (Adjust before recording, then confirm it by playing back.)

(9) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

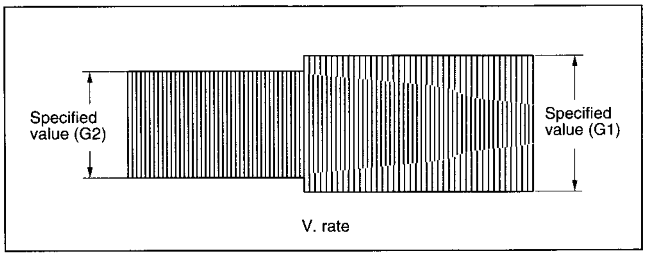


Fig. 3-4-1a Audio REC FM

3.5 SYSCON CIRCUIT

Note:

- *When perform this adjustment, remove the Mechanism assembly.*

3.5.1 Timer clock

Signal	(A)	• No signal
Mode	(B)	• EE
Equipment	(C)	• Frequency counter
Measuring point Short point	(D1) (D2) (D3)	• IC3001 pin61 • IC3001 pin24 • C3026 + and –
Adjustment part	(F)	• C3025 (TIMER CLOCK)
Specified value	(G)	• 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 µsec)

(1) Connect the frequency counter to the measuring point (D1).

(2) Connect the short wire between the short point (D2) and Vcc (5V).

(3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.

(4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.

(5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

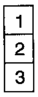
1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

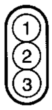
AUX : Active at high

$\overline{\text{AUX}}$ or AUX(L) : Active at low

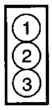
3. Interpreting Connector indications



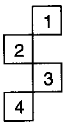
Removable connector



Wire soldered directly on board



Non-removable Board connector



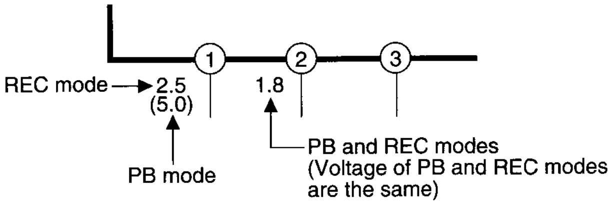
Board to Board

→
←
↔

Connected pattern on board
The arrows indicate signal path

4. Voltage measurement

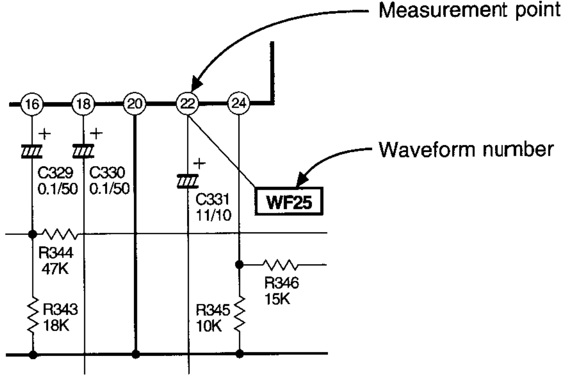
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.


1
2
3
REC mode
2.5
(5.0)
1.8
PB mode
PB and REC modes
(Voltage of PB and REC modes are the same)

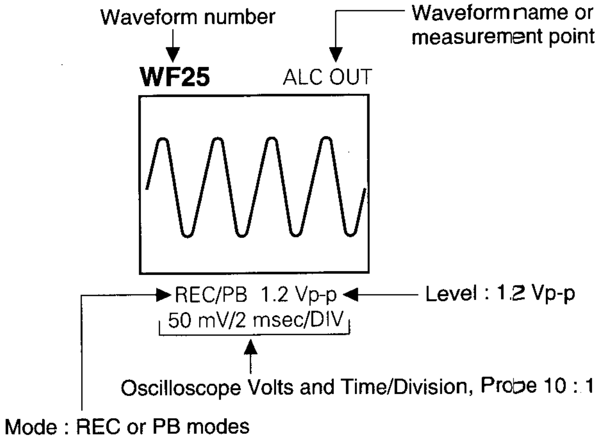
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.


Measurement point
Waveform number
16
18
20
22
24
C329 0.1/50
C330 0.1/50
C331 11/10
WF25
R344 47K
R343 18K
R345 10K
R346 15K

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
Level : 1.2 Vp-p
50 mV/2 msec/DIV
Oscilloscope Volts and Time/Division, Probe 10 : 1
Mode : REC or PB modes

6. Signal path Symbols

The arrows indicate the signal path as follows.

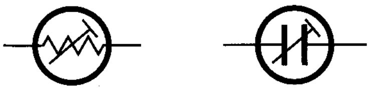
⇨	Playback signal path
➡ (outlined shaft)	Playback and recording signal path
➡	Recording signal path (including E-E signal path)
⇨▷	Capstan servo path
➡▶	Drum servo path

(Example)

⇨ R-Y	Playback R-Y signal path
➡ Y	Recording Y signal path

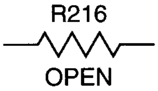
7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



CIRCUIT BOARD NOTES

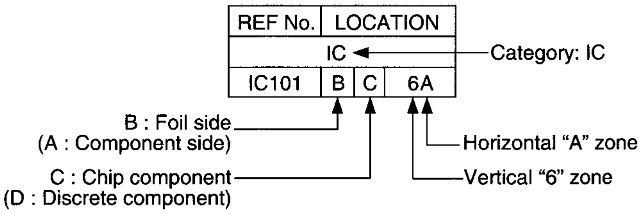
1. Foil and Component sides

1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.

2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

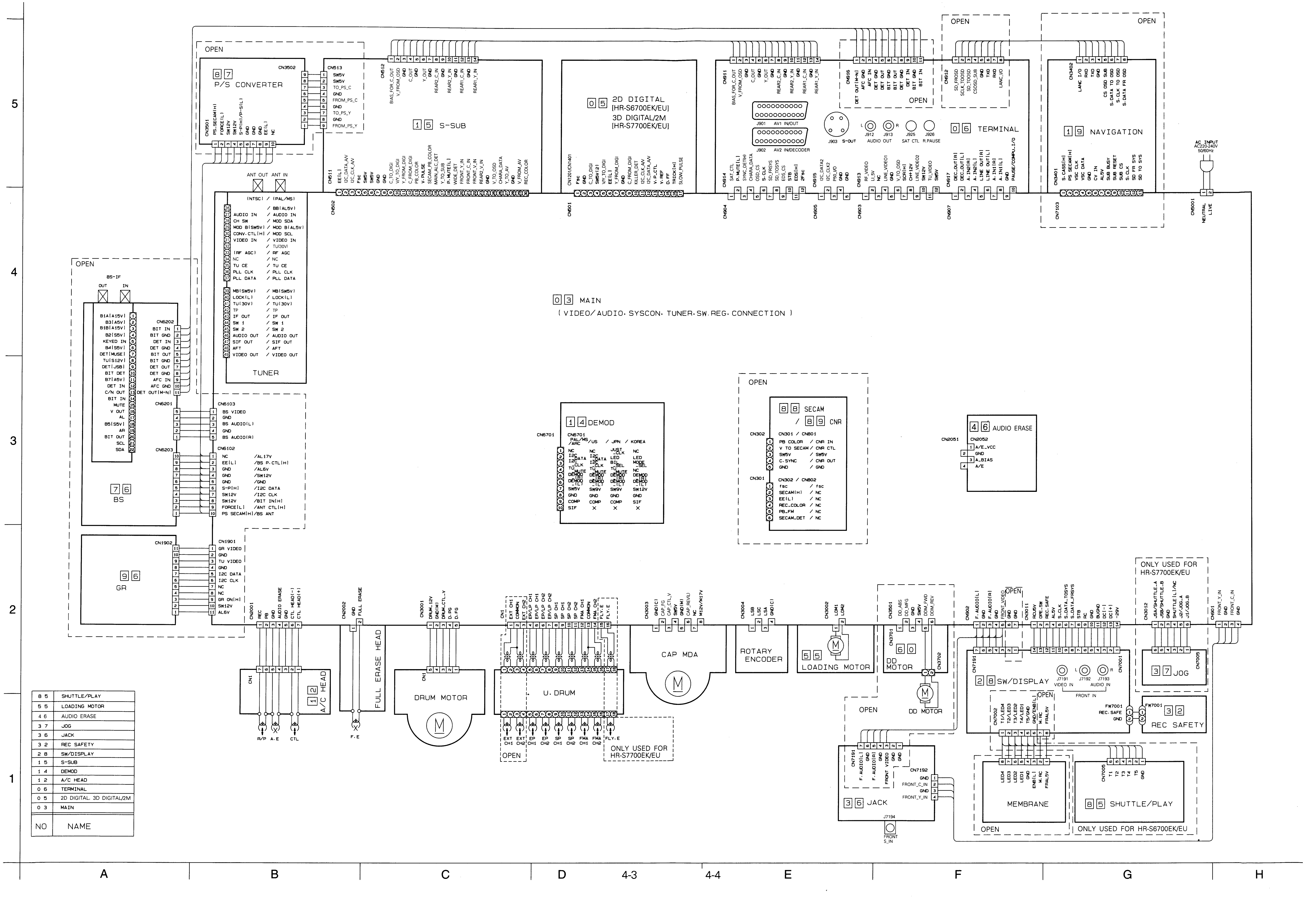
Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category: IC
IC101
B
C
6A
B : Foil side
(A : Component side)
C : Chip component
(D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

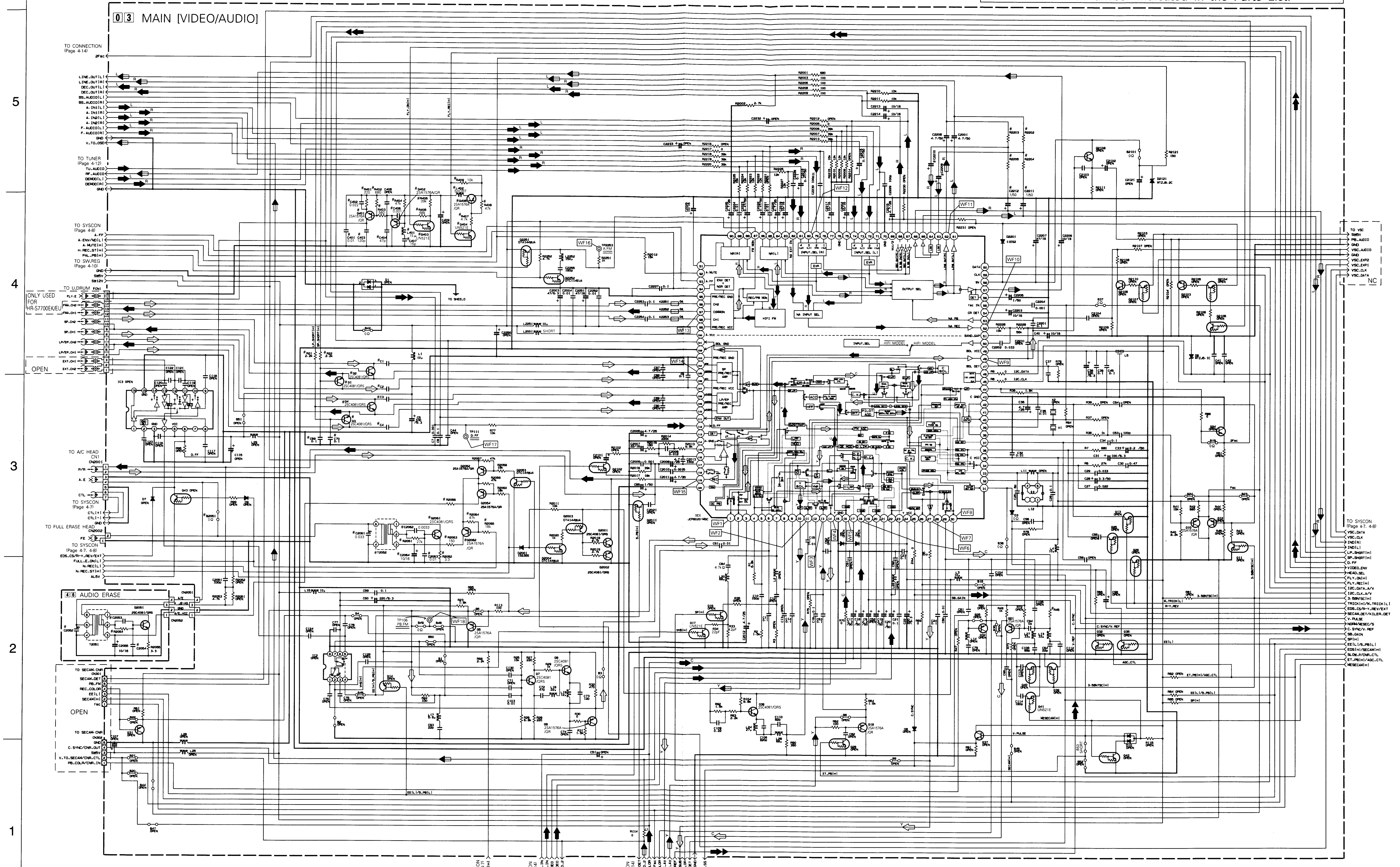
4.1 BOARD INTERCONNECTIONS


OPEN
8 7 P/S CONVERTER
CN3502
CN3501
CN513
1 5 S-SUB
CN512
CN511
CN502
0 5 2D DIGITAL [HR-S6700EK/EU] 3D DIGITAL/2M [HR-S7700EK/EU]
CN501
CN1201/CN1401
CN911
CN916
CN904
CN905
CN903
CN907
CN912
CN917
J901 AV1 IN/OUT
J902 AV2 IN/DECODER
J903 S-OUT
J912 J913 AUDIO OUT
J925 SAT CTL
J926 R.PAUSE
0 6 TERMINAL
1 9 NAVIGATION
CN3402
CN3401
CN7103
AC INPUT AC220-240V 50/60Hz
CN5001
NEUTRAL
LIVE
ANT OUT
ANT IN
TUNER
0 3 MAIN
(VIDEO/AUDIO. SYSCON. TUNER. SW.REG. CONNECTION)
BS-IF
OUT
IN
CN6202
CN6201
CN6203
CN6103
CN6102
7 6 BS
CN1902
CN1901
9 6 GR
1 4 DEMOD
CN6701
8 8 SECAM / 8 9 CNR
CN302
CN301
4 6 AUDIO ERASE
CN2051
CN2052
CN2001
1 2 A/C HEAD
CN1
R/P
A.E
CTL
CN2002
FULL ERASE HEAD
F.E
CN3001
DRUM MOTOR
U. DRUM
EXT CH1
EXT CH2
EP CH1
EP CH2
SP CH1
SP CH2
FMA CH1
FMA CH2
FLY.E
ONLY USED FOR HR-S7700EK/EU
CN3003
CAP MDA
CN3004
ROTARY ENCODER
CN3002
5 5 LOADING MOTOR
CN3501
CN3701
CN3702
6 0 DD MOTOR
DD MOTOR
CN902
CN7191
CN7192
3 6 JACK
J7194
FRONT S_IN
CN3011
CN7001
2 8 SW/DISPLAY
J7191 VIDEO IN
J7192
J7193 AUDIO IN
FRONT IN
FW7001
REC. SAFE
3 2 REC SAFETY
CN7002
MEMBRANE
CN7005
8 5 SHUTTLE/PLAY
ONLY USED FOR HR-S6700EK/EU
CN3012
3 7 JOG
CN901
M
1
2
3
4
5
A
B
C
D
4-3
4-4
E
F
G
H

NO	NAME
8 5	SHUTTLE/PLAY
5 5	LOADING MOTOR
4 6	AUDIO ERASE
3 7	JOG
3 6	JACK
3 2	REC SAFETY
2 8	SW/DISPLAY
1 5	S-SUB
1 4	DEMOD
1 2	A/C HEAD
0 6	TERMINAL
0 5	2D DIGITAL, 3D DIGITAL/2M
0 3	MAIN

4.2 VIDEO/AUDIO AND AUDIO ERASE SCHEMATIC DIAGRAMS

NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

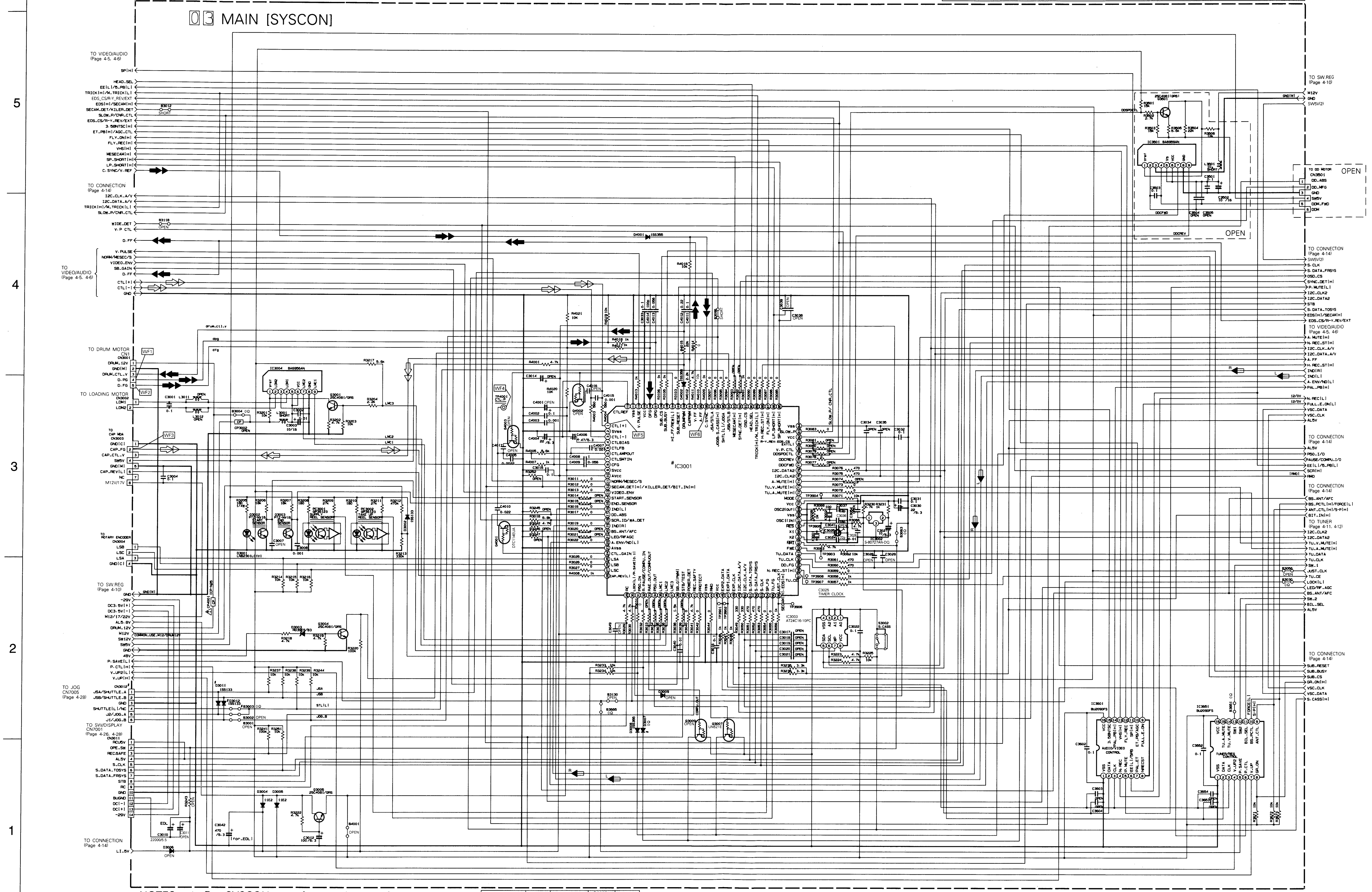

03 MAIN [VIDEO/AUDIO]
46 AUDIO ERASE
TO CONNECTION (Page 4-14)
TO TUNER (Page 4-12)
TO SYSCON (Page 4-8)
TO SW.REG (Page 4-10)
TO U.DRUM
ONLY USED FOR HR-S7700EK/EU
OPEN
TO A/C HEAD CN1
TO SYSCON (Page 4-7)
TO FULL ERASE HEAD
TO SYSCON (Page 4-7, 4-8)
TO VSC
NC
IC1
IC3
TO SYSCON (Page 4-7)
TO CONNECTION (Page 4-13, 4-14)
1
2
3
4
5
A
B
C
D
4-5
4-6
E
F
G
H

NOTES : 1. For VIDEO/AUDIO waveforms, please refer to page 4-32.
2. Comparison chart of models & marks (#).

REF NO.	CN1	Q1-Q4	C1-C4	C69,C70	R4 R21,R22	R46	Q401-Q405	C401-C404 C406,C407	R401-R409 L401,L402	R2054	C2052	C2053	C2054	B2051	T2052 Q2061,Q2062	C2061-C2064 R2061-R2065	R2056	C2209 C2210	C2211 C2212	R2202 R2203	R2204 R2205
MODEL HR-S6700EK/EU	PIN4-14	USED	0.01 μF	USED	USED	560 Ω	NOT USED	NOT USED	NOT USED	12k Ω	0.082 μF	0.0047 μF	0.022 μF	USED	NOT USED	NOT USED	820	10 μF/16V	NOT USED	3.3k Ω	0 Ω
MODEL HR-S7700EK/EU	PIN4-16	NOT USED	0.1 μF	NOT USED	NOT USED	270 Ω	USED	USED	USED	15k Ω	0.033 μF	0.0033 μF	0.01 μF	NOT USED	USED	USED	100 Ω	0.1 μF/50V	USED	2.2k Ω	1k Ω

4.3 SYSTEM CONTROL SCHEMATIC DIAGRAM

NOTE : *When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*


03 MAIN [SYSCON]
TO VIDEO/AUDIO (Page 4-5, 4-6)
SP[H]
HEAD_SEL
EE[L]/5_PB[L]
TRICK[H]/M_TRICK[L]
EDS_CS/R-Y_REV/EXT
EDS[H]/SECAM[H]
SECAM_DET/KILER_DET
B3012 SHORT
SLOW_P/CNR_CTL
EDS_CS/R-Y_REV/EXT
3.58NTSC[H]
ET_PB[H]/AGC_CTL
FLY_ON[H]
FLY_REC[H]
VHS[H]
MESECAM[H]
SP_SHORT[H]
LP_SHORT[H]
C.SYNC/V.REF
TO CONNECTION (Page 4-14)
I2C_CLK_A/V
I2C_DATA_A/V
TRICK[H]/M_TRICK[L]
SLOW_P/CNR_CTL
WIDE_DET
B3118 OPEN
V.P CTL
D.FF
TO VIDEO/AUDIO (Page 4-5, 4-6)
V.PULSE
NORM/MESEC/S
VIDEO_ENV
SB_GAIN
D.FF
CTL[+]
CTL[-]
GND
drum_ctl_v
dpg
dfg
TO DRUM MOTOR CN1 CN3001
DRUM_12V
GND[M]
DRUM_CTL_V
D.PG
D.FG
WF1
WF2
TO LOADING MOTOR CN3002
LDM1
LDM2
TO CAP MDA CN3003
GND[C]
CAP_FG
CAP_CTL_V
SW5V
GND[M]
CAP_REV[L]
NC
M12V/17V
WF3
TO ROTARY ENCODER CN3004
LSB
LSC
LSA
GND[C]
TO SW.REG (Page 4-10)
GND
-29V
DC3.5V[+]
DC3.5V[-]
M12/17/22V
AL5.8V
DRUM_12V
M12V
COMMON_USE_M12/DRUM12V
SW12V
SW5V
GND
48V
P.SAVE[L]
P.CTL[H]
V_UP2[L]
V_UP[H]
TO JOG CN7005 (Page 4-28)
CN3012#
JSA/SHUTTLE_A
JSB/SHUTTLE_B
GND
SHUTTLE[L]/NC
J2/JOG_A
J1/JOG_B
TO SW/DISPLAY CN7001 (Page 4-26, 4-28)
CN3011
RCU5V
OPE_SW
REC.SAFE
AL5V
S_CLK
S_DATA_TOSYS
S_DATA_FRSYS
STB
RC
GND
BUGND
DC[-]
DC[+]
-29V
TO CONNECTION (Page 4-14)
LI_5V
D3006 OPEN
C3010 22000/5.5
C3011 OPEN
C3042 470/6.3 [for_EDL]
#IC3001
IC3004 BA6956AN
IC3003 AT24C16-10PC
IC3601 BU2090FS
IC3651 BU2090FS
AUDIO/VIDEO CONTROL
TUNER/REG CONTROL
IC3501 BA6956AN
OPEN
TO SW.REG (Page 4-10)
M12V
GND
SW5V(2)
TO DD MOTOR CN3501
DD_ABS
DD_MFG
GND
SW5V
DDM_FWD
DDM
TO CONNECTION (Page 4-14)
SW5V(2)
S.CLK
S.DATA_FRSYS
OSD_CS
SYNC_DET[H]
P.MUTE[L]
I2C_CLK2
I2C_DATA2
STB
S.DATA_TOSYS
EDS[H]/SECAM[H]
EDS_CS/R-Y_REV/EXT
TO VIDEO/AUDIO (Page 4-5, 4-6)
A.MUTE[H]
N.REC_ST[H]
I2C_CLK_A/V
I2C_DATA_A/V
A.FF
H.REC_ST[H]
IND[R]
IND[L]
A.ENV/ND[L]
PAL_PB[H]
N.REC[L]
FULL_E_ON[L]
VSC_DATA
VSC_CLK
AL5V
TO CONNECTION (Page 4-14)
AL5V
P50_I/O
PAUSE/COMPU_I/O
EE[L]/5_PB[L]
SCR[H]
RMO
TO CONNECTION (Page 4-14)
BS_ANT/AFC
BS_PCTL[H]/FORCE[L]
ANT_CTL[H]/S-P[H]
BIT_IN[H]
TO TUNER (Page 4-11, 4-12)
I2C_CLK2
I2C_DATA2
TU_V_MUTE[H]
TU_A_MUTE[H]
TU_DATA
TU_CLK
SW_1
JUST_CLK
TU_CE
LOCK[L]
LED/RF_AGC
BS_ANT/AFC
SW_2
BIL_SEL
AL5V
TO CONNECTION (Page 4-14)
SUB_RESET
SUB_BUSY
SUB_CS
GR_ON[H]
VSC_CLK
VSC_DATA
S.CASS[H]
WF4
WF5
WF6
1
2
3
4
5

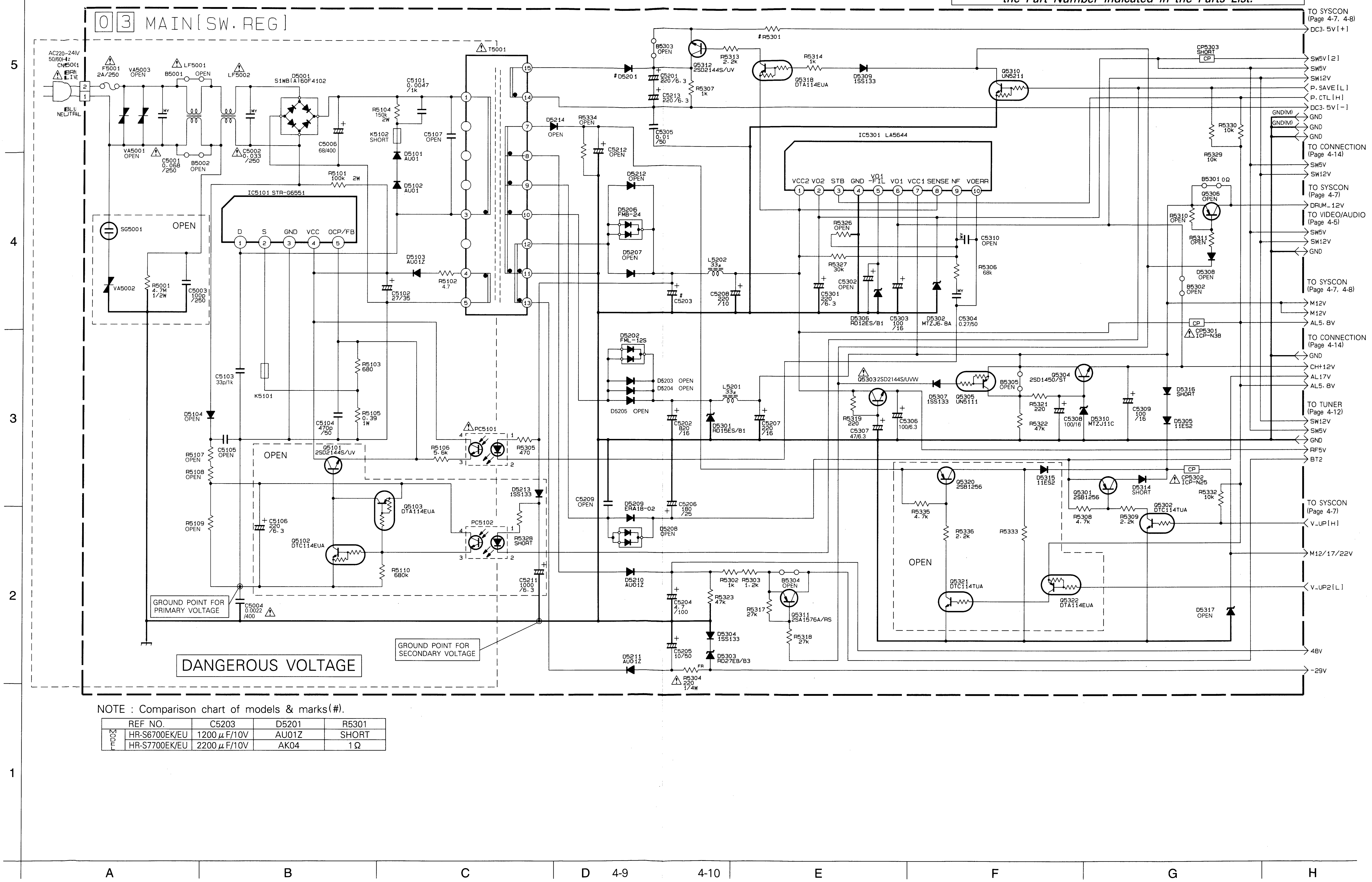
NOTES : 1. For SYSCON waveforms, please refer to page 4-32.
2. Comparison chart of models & marks(#).

	REF NO.	CN3012	IC3001	D3007 D3011,D3012	B3003
MODEL	HR-S6700EK/EU	NOT USED	HD6432194AA01F	NOT USED	NOT USED
	HR-S7700EK/EU	USED	HD6432194AA08F	USED	USED

A B C D 4-7 4-8 E F G H

4.4 SWITCHING REGULATOR SCHEMATIC DIAGRAM

NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



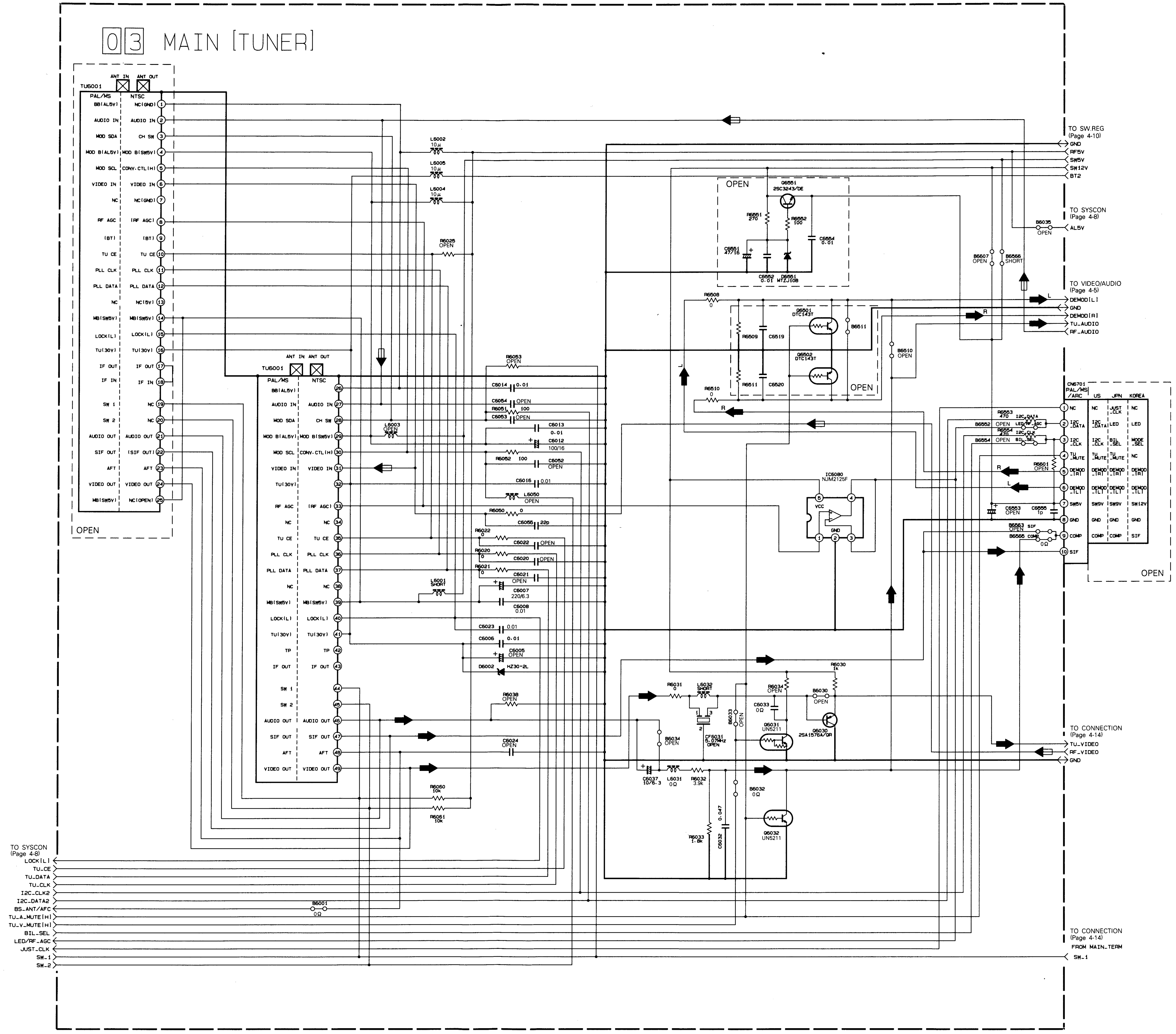
03 MAIN[SW.REG]
AC220-240V 50/60Hz
CN5001
BRN LIVE
BLU NEUTRAL
F5001 2A/250
VA5003 OPEN
LF5001
B5001 OPEN
LF5002
D5001 S1WB(A)60F4102
C5101 0.0047 /1k
T5001
VA5001 OPEN
C5001 0.068 /250
B5002 OPEN
C5002 0.033 /250
C5006 68/400
R5104 150k 2W
K5102 SHORT
C5107 OPEN
D5101 AU01
D5102 AU01
R5101 100k 2W
IC5101 STR-G6551
D S GND VCC OCP/FB
SG5001
OPEN
VA5002
R5001 4.7M 1/2W
C5003 100p /250
D5103 AU01Z
R5102 4.7
C5102 27/35
C5103 33p/1k
K5101
R5103 680
R5105 0.39 1W
C5104 470p /50
D5104 OPEN
R5107 OPEN
C5105 OPEN
R5108 OPEN
OPEN
Q5101 2SD2144S/UV
PC5101
R5106 5.6k
R5305 470
R5109 OPEN
C5106 220 /6.3
Q5103 DTA114EUA
Q5102 DTC114EUA
R5110 680k
PC5102
D5213 1SS133
R5328 SHORT
C5211 1000 /6.3
GROUND POINT FOR PRIMARY VOLTAGE
C5004 0.0022 /400
GROUND POINT FOR SECONDARY VOLTAGE
DANGEROUS VOLTAGE
#D5201
D5214 OPEN
R5334 OPEN
C5212 OPEN
D5212 OPEN
D5206 FMB-24
D5207 OPEN
#C5203
L5202 33μ
C5208 220 /10
D5202 FML-12S
D5203 OPEN
D5204 OPEN
D5205 OPEN
C5202 820 /16
D5301 RD15ES/B1
L5201 33μ
C5207 220 /16
C5209 OPEN
D5209 ERA18-02
C5206 180 /25
D5208 OPEN
D5210 AU01Z
C5204 4.7 /100
C5205 10/50
D5211 AU01Z
R5304 220 1/4W FR
B5303 OPEN
Q5312 2SD2144S/UV
R5313 2.2k
#R5301
C5201 220/6.3
C5213 220/6.3
R5307 1k
C5305 0.01 /50
Q5318 DTA114EUA
R5314 1k
D5309 1SS133
Q5310 UN5211
IC5301 LA5644
VCC2 VO2 STB GND VO1 -FIL VO1 VCC1 SENSE NF VOERR
R5326 OPEN
R5327 30k
C5301 220 /6.3
C5302 OPEN
D5306 RD12ES/B1
C5303 100 /16
D5302 MTZJ6.8A
C5304 0.27/50
C5310 OPEN
R5306 68k
Q5303 2SD2144S/UVW
R5319 220
C5307 47/6.3
C5306 100/6.3
D5307 1SS133
Q5305 UN5111
B5305 OPEN
Q5304 2SD1450/ST
R5321 220
R5322 47k
C5308 100/16
D5310 MTZJ11C
C5309 100 /16
D5316 SHORT
D5305 11ES2
R5302 1k
R5303 1.2k
B5304 OPEN
R5323 47k
R5317 27k
Q5311 2SA1576A/RS
R5318 27k
D5304 1SS133
D5303 RD27EB/B3
Q5320 2SB1256
R5335 4.7k
R5336 2.2k
R5333
D5315 11ES2
Q5301 2SB1256
R5308 4.7k
D5314 SHORT
R5309 2.2k
Q5302 DTC114TUA
CP5302 ICP-N25
R5332 10k
Q5321 DTC114TUA
Q5322 DTA114EUA
D5317 OPEN
CP5303 SHORT
R5330 10k
R5329 10k
B5301 0Ω
Q5306 OPEN
R5310 OPEN
R5311 OPEN
D5308 OPEN
B5302 OPEN
CP5301 ICP-N38
TO SYSCON (Page 4-7, 4-8)
DC3.5V[+]
SW5V[2]
SW5V
SW12V
P.SAVE[L]
P.CTL[H]
DC3.5V[-]
GND(M)
GND
TO CONNECTION (Page 4-14)
SW5V
SW12V
TO SYSCON (Page 4-7)
DRUM-12V
TO VIDEO/AUDIO (Page 4-5)
SW5V
SW12V
GND
TO SYSCON (Page 4-7, 4-8)
M12V
M12V
AL5.8V
TO CONNECTION (Page 4-14)
GND
CH+12V
AL17V
AL5.8V
TO TUNER (Page 4-12)
SW12V
SW5V
GND
RF5V
BT2
TO SYSCON (Page 4-7)
V-UP[H]
M12/17/22V
V-UP2[L]
48V
-29V
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTE : Comparison chart of models & marks(#).

MODEL	REF NO.	C5203	D5201	R5301
	HR-S6700EK/EU	1200 μF/10V	AU01Z	SHORT
	HR-S7700EK/EU	2200 μF/10V	AK04	1Ω

4.5 TUNER SCHEMATIC DIAGRAM

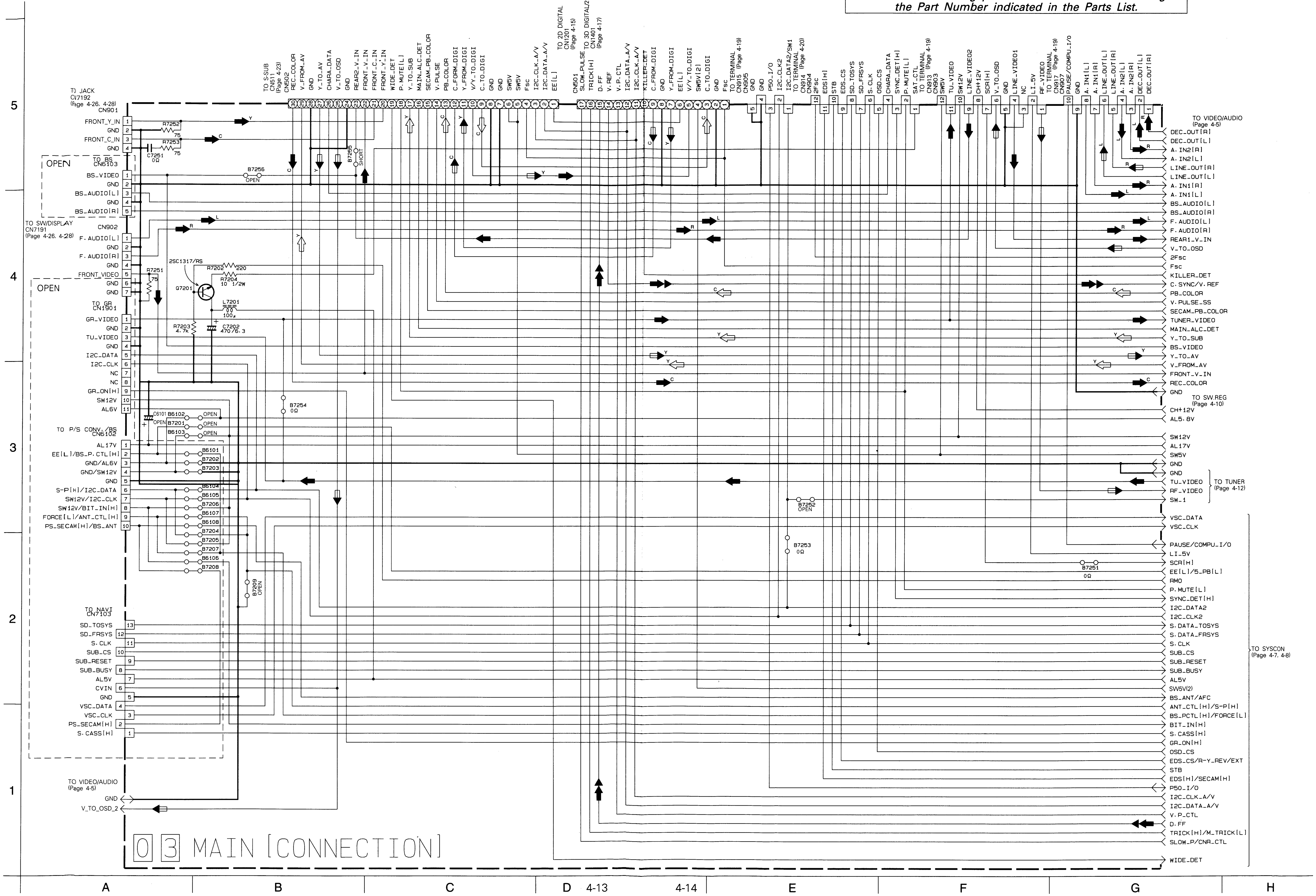
NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



03 MAIN [TUNER]
TU6001
ANT IN
ANT OUT
PAL/MS
NTSC
BB(AL5V)
NC(GND) 1
AUDIO IN
AUDIO IN 2
MOD SDA
CH SW 3
MOD B(AL5V)
MOD B(SW5V) 4
MOD SCL
CONV.CTL(H) 5
VIDEO IN
VIDEO IN 6
NC
NC(GND) 7
RF AGC
(RF AGC) 8
(BT)
(BT) 9
TU CE
TU CE 10
PLL CLK
PLL CLK 11
PLL DATA
PLL DATA 12
NC
NC(5V) 13
MB(SW5V)
MB(SW5V) 14
LOCK(L)
LOCK(L) 15
TU(30V)
TU(30V) 16
IF OUT
IF OUT 17
IF IN
IF IN 18
SW 1
NC 19
SW 2
NC 20
AUDIO OUT
AUDIO OUT 21
SIF OUT
(SIF OUT) 22
AFT
AFT 23
VIDEO OUT
VIDEO OUT 24
MB(SW5V)
NC(OPEN) 25
OPEN
TU6001
ANT IN
ANT OUT
PAL/MS
NTSC
BB(AL5V) 26
AUDIO IN
AUDIO IN 27
MOD SDA
CH SW 28
MOD B(AL5V)
MOD B(SW5V) 29
MOD SCL
CONV.CTL(H) 30
VIDEO IN
VIDEO IN 31
TU(30V) 32
RF AGC
(RF AGC) 33
NC
NC 34
TU CE
TU CE 35
PLL CLK
PLL CLK 36
PLL DATA
PLL DATA 37
NC
NC 38
MB(SW5V)
MB(SW5V) 39
LOCK(L)
LOCK(L) 40
TU(30V)
TU(30V) 41
TP
TP 42
IF OUT
IF OUT 43
SW 1 44
SW 2 45
AUDIO OUT
AUDIO OUT 46
SIF OUT
SIF OUT 47
AFT
AFT 48
VIDEO OUT
VIDEO OUT 49
L6002 10μ
L6005 10μ
L6004 10μ
R6025 OPEN
L6003 OPEN
R6053 OPEN
C6014 0.01
C6054 OPEN
R6051 100
C6053 OPEN
C6013 0.01
C6012 100/16
R6052 100
C6052 OPEN
C6016 0.01
L6050 OPEN
R6050 0
C6055 22p
R6022 0
C6022 OPEN
R6020 0
C6020 OPEN
R6021 0
C6021 OPEN
C6007 220/6.3
L6001 SHORT
C6008 0.01
C6023 0.01
C6006 0.01
C6005 OPEN
D6002 HZ30-2L
R6038 OPEN
C6024 OPEN
R6060 10k
R6061 10k
OPEN
Q6661 2SC3243/DE
R6661 270
R6662 100
C6664 0.01
C6661 47/16
C6662 0.01
D6661 MTZJ10B
R6608 0
Q6601 DTC143T
R6609
C6519
B6611
Q6602 DTC143T
R6611
C6520
R6610 0
OPEN
B6510 OPEN
IC6080 NJM2125F
VCC
GND
1 2 3 4 5
R6030 1k
R6031 0
L6032 SHORT
R6034 OPEN
B6030 OPEN
C6033 0Ω
B6033 OPEN
Q6030 2SA1576A/QR
Q6031 UN5211
CF6031 5.07MHz OPEN
B6034 OPEN
C6037 10/6.3
L6031 0Ω
R6032 3.9k
B6032 0Ω
R6033 1.8k
C6032
0.047
Q6032 UN5211
B6001 0Ω
TO SW.REG (Page 4-10)
GND
RF5V
SW5V
SW12V
BT2
TO SYSCON (Page 4-8)
B6035 OPEN
AL5V
B6607 OPEN
B6566 SHORT
TO VIDEO/AUDIO (Page 4-5)
DEMOD[L]
GND
DEMOD[R]
TU_AUDIO
RF_AUDIO
L
R
CN6701
PAL/MS /ARC
US
JPN
KOREA
1 NC | NC | JUST_CLK | NC
2 I2C_DATA | I2C_DATA | LED | LED
3 I2C_CLK | I2C_CLK | BIL_SEL | MODE_SEL
4 TU_MUTE | TU_MUTE | TU_MUTE | NC
5 DEMOD_[R] | DEMOD_[R] | DEMOD_[R] | DEMOD_[R]
6 DEMOD_[L] | DEMOD_[L] | DEMOD_[L] | DEMOD_[L]
7 SW5V | SW9V | SW9V | SW12V
8 GND | GND | GND | GND
9 COMP | COMP | COMP | SIF
10 SIF
OPEN
R6553 470
I2C_DATA
B6552 OPEN
LED/RF_AGC
R6554 470
I2C_CLK
B6554 OPEN
BIL_SEL
R6601 OPEN
C6553 OPEN
C6555 1p
B6563 OPEN SIF
B6565 COMP 0Ω
TO CONNECTION (Page 4-14)
TU_VIDEO
RF_VIDEO
GND
TO CONNECTION (Page 4-14)
FROM MAIN_TERM
SW_1
TO SYSCON (Page 4-8)
LOCK(L)
TU_CE
TU_DATA
TU_CLK
I2C_CLK2
I2C_DATA2
BS_ANT/AFC
TU_A_MUTE(H)
TU_V_MUTE(H)
BIL_SEL
LED/RF_AGC
JUST_CLK
SW_1
SW_2
1
2
3
4
5
A
B
C
D
E
F
G
H

4.6 CONNECTION SCHEMATIC DIAGRAM

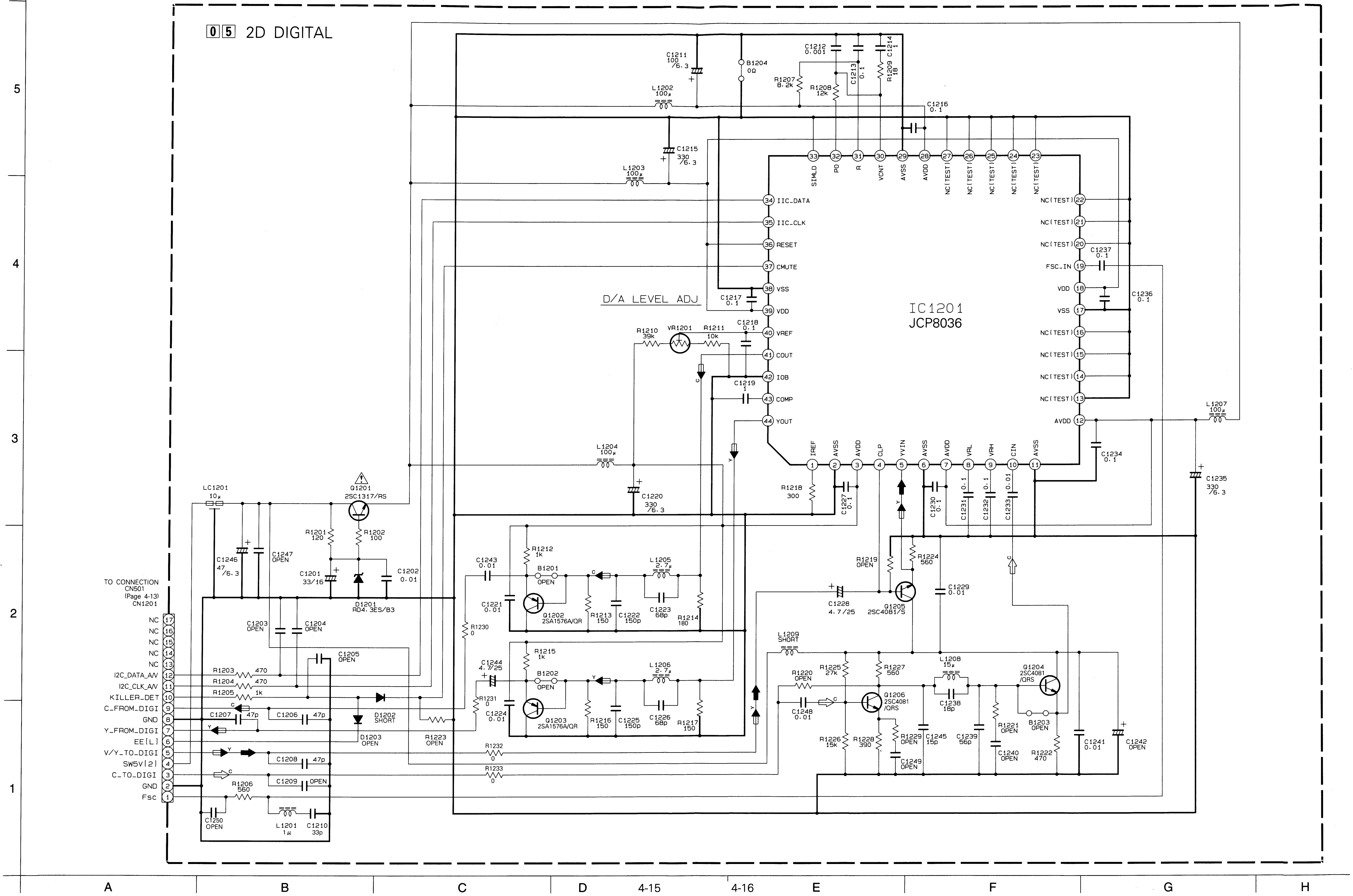
NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



0 3 MAIN [CONNECTION]
TO JACK
CI7192
(Page 4-26, 4-28)
CN901
FRONT_Y_IN
GND
FRONT_C_IN
GND
R7252
75
R7253
75
C7251
0Ω
OPEN
TO BS
CN6103
BS_VIDEO
GND
BS_AUDIO[L]
GND
BS_AUDIO[R]
TO SW/DISPLAY
CN7191
(Page 4-26, 4-28)
CN902
F. AUDIO[L]
GND
F. AUDIO[R]
GND
FRONT_VIDEO
GND
GND
R7251
75
2SC1317/RS
Q7201
R7202
220
R7204
10 1/2W
L7201
100μ
R7203
4.7k
C7202
470/6.3
TO GR
CN1901
GR_VIDEO
GND
TU_VIDEO
GND
I2C_DATA
I2C_CLK
NC
NC
GR_ON[H]
SW12V
AL6V
C6101
B6102
B7201
B6103
OPEN
TO P/S CONV./BS
CN6102
AL17V
EE[L]/BS_P.CTL[H]
GND/AL6V
GND/SW12V
GND
S-P[H]/I2C_DATA
SW12V/I2C_CLK
SW12V/BIT_IN[H]
FORCE[L]/ANT_CTL[H]
PS_SECAM[H]/BS_ANT
B6101
B7202
B7203
B6104
B6105
B7206
B6107
B7204
B6108
B7205
B7207
B6106
B7208
B7209
OPEN
B7254
0Ω
B7256
OPEN
B7255
SHORT
TO NAVI
CN7103
SD_TOSYS
SD_FRSYS
S. CLK
SUB_CS
SUB_RESET
SUB_BUSY
AL5V
CVIN
GND
VSC_DATA
VSC_CLK
PS_SECAM[H]
S. CASS[H]
TO VIDEO/AUDIO
(Page 4-5)
GND
V_TO_OSD_2
TO S-SUB
CN511
(Page 4-23)
CN502
REC_COLOR
V_FROM_AV
GND
Y_TO_AV
CHARA_DATA
V_TO_OSD
GND
REAR2_V_IN
FRONT_V_IN
FRONT_C_IN
FRONT_Y_IN
WIDE_DET
P. MUTE[L]
Y_TO_SUB
MAIN_ALC_DET
SECAM_PB_COLOR
V. PULSE
PB_COLOR
C_FORM_DIGI
Y_FROM_DIGI
V/Y_TO_DIGI
C_TO_DIGI
GND
GND
SW5V
SW5V
Fsc
I2C_CLK_A/V
I2C_DATA_A/V
EE[L]
TO 2D DIGITAL
CN1201
(Page 4-15)
CN501
SLOW_PULSE
TRICK[H]
D. FF
V. REF
V. P. CTL
I2C_DATA_A/V
I2C_CLK_A/V
KILLER_DET
C_FROM_DIGI
GND
Y_FROM_DIGI
EE[L]
V/Y_TO_DIGI
SW5V[2]
C_TO_DIGI
GND
Fsc
TO 3D DIGITAL/2M
CN1401
(Page 4-17)
TO TERMINAL
CN915 (Page 4-19)
CN905
GND
P50_I/O
I2C_CLK2
I2C_DATA2/SW1
TO TERMINAL
CN914 (Page 4-20)
CN904
2Fsc
EDS[H]
STB
EDS_CS
SD_TOSYS
SD_FRSYS
S. CLK
OSD_CS
CHARA_DATA
SYNC_DET[H]
P. MUTE[L]
SAT_CTL
TO TERMINAL
CN913 (Page 4-19)
CN903
SW5V
TU_VIDEO
SW12V
LINE_VIDEO2
CH+12V
SCR[H]
V_TO_OSD
GND
LINE_VIDEO1
NC
LI_5V
RF_VIDEO
TO TERMINAL
CN917 (Page 4-19)
CN907
PAUSE/COMPU_I/O
GND
A. IN1[L]
A. IN1[R]
LINE_OUT[L]
LINE_OUT[R]
A. IN2[L]
A. IN2[R]
DEC_OUT[L]
DEC_OUT[R]
TO VIDEO/AUDIO
(Page 4-5)
DEC_OUT[R]
DEC_OUT[L]
A. IN2[R]
A. IN2[L]
LINE_OUT[R]
LINE_OUT[L]
A. IN1[R]
A. IN1[L]
BS_AUDIO[L]
BS_AUDIO[R]
F. AUDIO[L]
F. AUDIO[R]
REAR1_V_IN
V_TO_OSD
2Fsc
Fsc
KILLER_DET
C. SYNC/V. REF
PB_COLOR
V. PULSE_SS
SECAM_PB_COLOR
TUNER_VIDEO
MAIN_ALC_DET
Y_TO_SUB
BS_VIDEO
Y_TO_AV
V_FROM_AV
FRONT_V_IN
REC_COLOR
GND
TO SW.REG
(Page 4-10)
CH+12V
AL5.8V
SW12V
AL17V
SW5V
GND
GND
TU_VIDEO
RF_VIDEO
SW_1
TO TUNER
(Page 4-12)
VSC_DATA
VSC_CLK
PAUSE/COMPU_I/O
LI_5V
SCR[H]
EE[L]/5_PB[L]
RMO
P. MUTE[L]
SYNC_DET[H]
I2C_DATA2
I2C_CLK2
S. DATA_TOSYS
S. DATA_FRSYS
S. CLK
SUB_CS
SUB_RESET
SUB_BUSY
AL5V
SW5V(2)
BS_ANT/AFC
ANT_CTL[H]/S-P[H]
BS_PCTL[H]/FORCE[L]
BIT_IN[H]
S. CASS[H]
GR_ON[H]
OSD_CS
EDS_CS/R-Y_REV/EXT
STB
EDS[H]/SECAM[H]
P50_I/O
I2C_CLK_A/V
I2C_DATA_A/V
V. P_CTL
D. FF
TRICK[H]/M_TRICK[L]
SLOW_P/CNR_CTL
WIDE_DET
TO SYSCON
(Page 4-7, 4-8)
B7252
OPEN
B7253
0Ω
B7251
0Ω
Y
C
L
R
1
2
3
4
5
A
B
C
D
E
F
G
H

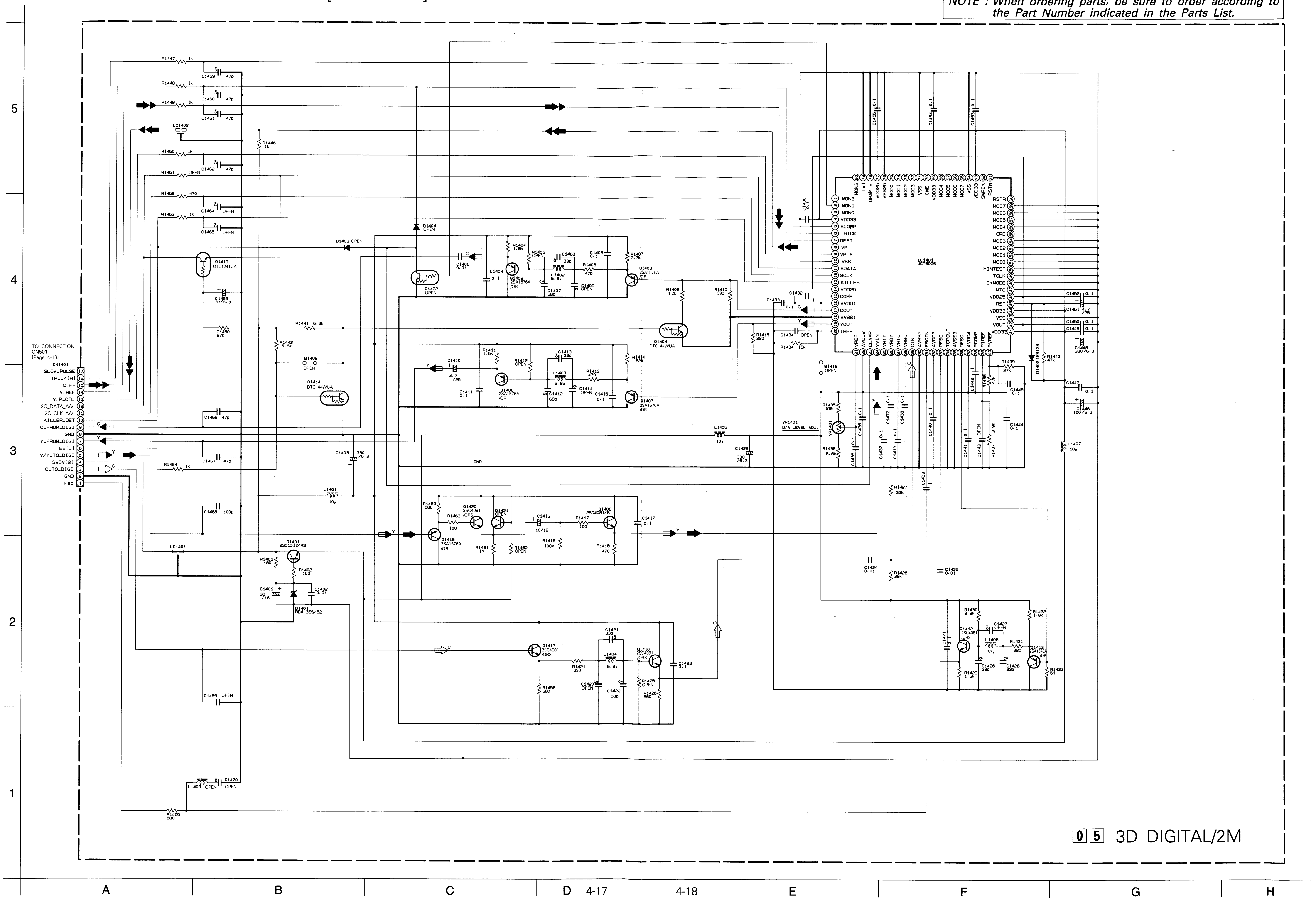
4.7 2D DIGITAL SCHEMATIC DIAGRAM [HR-S6700EK/EU]

NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


05 2D DIGITAL
IC1201
JCP8036
D/A LEVEL ADJ
TO CONNECTION CN501 (Page 4-13) CN1201
NC 17
NC 16
NC 15
NC 14
NC 13
I2C_DATA_A/V 12
I2C_CLK_A/V 11
KILLER_DET 10
C_FROM_DIGI 9
GND 8
Y_FROM_DIGI 7
EE[L] 6
V/Y_TO_DIGI 5
SW5V[2] 4
C_TO_DIGI 3
GND 2
Fsc 1
1 IREF
2 AVSS
3 AVDD
4 CLP
5 YVIN
6 AVSS
7 AVDD
8 VRL
9 VRH
10 CIN
11 AVSS
12 AVDD
13 NC(TEST)
14 NC(TEST)
15 NC(TEST)
16 NC(TEST)
17 VSS
18 VDD
19 FSC_IN
20 NC(TEST)
21 NC(TEST)
22 NC(TEST)
23 NC(TEST)
24 NC(TEST)
25 NC(TEST)
26 NC(TEST)
27 NC(TEST)
28 AVDD
29 AVSS
30 VCNT
31 R
32 PO
33 SIMLD
34 IIC_DATA
35 IIC_CLK
36 RESET
37 CMUTE
38 VSS
39 VDD
40 VREF
41 COUT
42 IOB
43 COMP
44 YOUT
Q1201 2SC1317/RS
Q1202 2SA1576A/QR
Q1203 2SA1576A/QR
Q1204 2SC4081 /QRS
Q1205 2SC4081/S
Q1206 2SC4081 /QRS
D1201 RD4.3ES/B3
D1202 SHORT
D1203 OPEN
VR1201
LC1201 10μ
L1201 1μ
L1202 100μ
L1203 100μ
L1204 100μ
L1205 2.7μ
L1206 2.7μ
L1207 100μ
L1208 15μ
L1209 SHORT
B1201 OPEN
B1202 OPEN
B1203 OPEN
B1204 0Ω
R1201 120
R1202 100
R1203 470
R1204 470
R1205 1k
R1206 560
R1207 8.2k
R1208 12k
R1209 18
R1210 39k
R1211 10k
R1212 1k
R1213 150
R1214 180
R1215 1k
R1216 150
R1217 150
R1218 300
R1219 OPEN
R1220 OPEN
R1221 OPEN
R1222 470
R1223 OPEN
R1224 560
R1225 27k
R1226 15k
R1227 560
R1228 390
R1229 OPEN
R1230 0
R1231 0
R1232 0
R1233 0
C1201 33/16
C1202 0.01
C1203 OPEN
C1204 OPEN
C1205 OPEN
C1206 47p
C1207 47p
C1208 47p
C1209 OPEN
C1210 33p
C1211 100 /6.3
C1212 0.001
C1213 0.1
C1214 1
C1215 330 /6.3
C1216 0.1
C1217 0.1
C1218 0.1
C1219 1
C1220 330 /6.3
C1221 0.01
C1222 150p
C1223 68p
C1224 0.01
C1225 150p
C1226 68p
C1227 0.1
C1228 4.7/25
C1229 0.01
C1230 0.1
C1231 0.1
C1232 0.1
C1233 0.01
C1234 0.1
C1235 330 /6.3
C1236 0.1
C1237 0.1
C1238 18p
C1239 56p
C1240 OPEN
C1241 0.01
C1242 OPEN
C1243 0.01
C1244 4.7/25
C1245 15p
C1246 47 /6.3
C1247 OPEN
C1248 0.01
C1249 OPEN
C1250 OPEN
Y
C
1
2
3
4
5
A
B
C
D
E
F
G
H

4.8 3D DIGITAL/2M SCHEMATIC DIAGRAM [HR-S7700EK/EU]

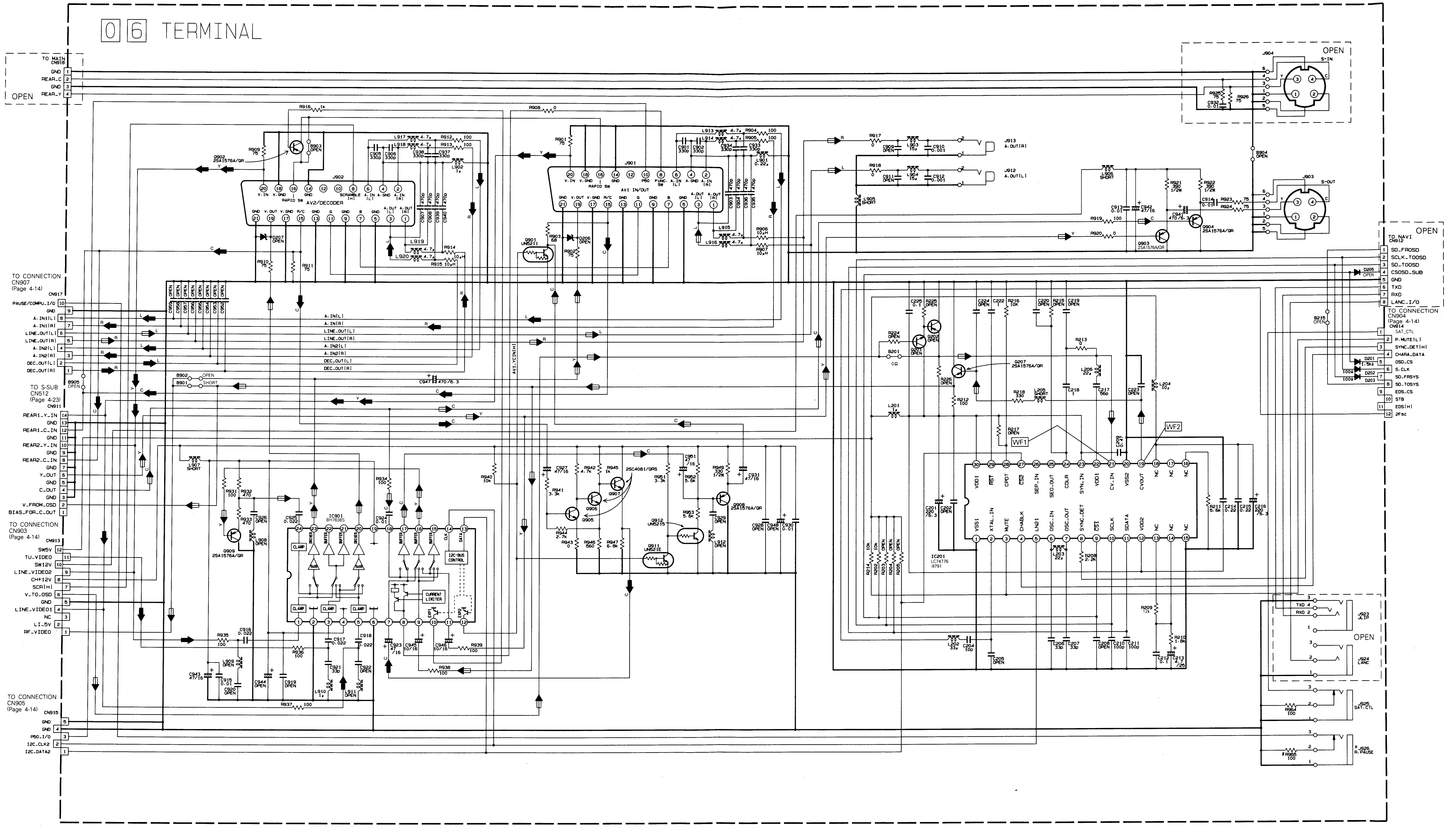
NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


1
2
3
4
5
A
B
C
D 4-17
4-18
E
F
G
H
TO CONNECTION
CN501
(Page 4-13)
CN1401
SLOW_PULSE 17
TRICK[H] 16
D.FF 15
V.REF 14
V.P_CTL 13
I2C_DATA_A/V 12
I2C_CLK_A/V 11
KILLER_DET 10
C_FROM_DIGI 9
GND 8
Y_FROM_DIGI 7
EE[L] 6
V/Y_TO_DIGI 5
SW5V[2] 4
C_TO_DIGI 3
GND 2
Fsc 1
IC1401
JCP8026
1 MON2
2 MON1
3 MON0
4 VDD33
5 SLOWP
6 TRICK
7 DFFI
8 VR
9 VPLS
10 VSS
11 SDATA
12 SCLK
13 KILLER
14 VDD25
15 COMP
16 AVDD1
17 COUT
18 AVSS1
19 YOUT
20 IREF
21 VREF
22 AVDD2
23 CLAMP
24 YVIN
25 VRTY
26 VRBY
27 VRTC
28 VRBC
29 CIN
30 AVSS2
31 FSCIN
32 AVDD3
33 PFSC
34 TCPOUT
35 AVSS3
36 RFSC
37 AVDD4
38 PCOMP
39 PIREF
40 PVREF
41 VDD33
42 VOUT
43 VSS
44 VDD33
45 RST
46 VDD25
47 MTO
48 CKMODE
49 TCLK
50 MINTEST
51 MCI0
52 MCI1
53 MCI2
54 MCI3
55 CRE
56 MCI4
57 MCI5
58 MCI6
59 MCI7
60 RSTR
61 RSTW
62 SWRCK
63 VDD33
64 VSS
65 MC07
66 MC06
67 MC05
68 MC04
69 VDD33
70 CWE
71 VSS
72 MC03
73 MC02
74 MC01
75 MC00
76 VSS25
77 VDD25
78 DRAMTE
79 TS1
80 MON3
R1447 1k
R1448 1k
R1449 1k
R1450 1k
R1451 OPEN
R1452 470
R1453 1k
R1454 1k
R1455 680
C1459 47p
C1460 47p
C1461 47p
C1462 47p
C1464 OPEN
C1465 OPEN
C1466 47p
C1467 47p
C1468 100p
C1469 OPEN
C1470 OPEN
L1409 OPEN
LC1401
LC1402
R1446 1k
Q1419
DTC124TUA
C1463 33/6.3
R1460 27k
R1441 6.8k
R1442 6.8k
B1409 OPEN
Q1414
DTC144WUA
C1403 330/6.3
L1401 10μ
Q1401
2SC1317/RS
R1401 180
R1402 100
C1401 33/16
C1402 0.01
D1401
RD4.3ES/B2
D1403 OPEN
D1404 OPEN
Q1422 OPEN
C1406 0.01
C1404 0.1
Q1402
2SA1576A
/QR
R1404 1.8k
R1405 OPEN
C1408 33p
L1402 6.8μ
C1407 68p
C1405 0.1
R1406 470
C1409 OPEN
R1407 2.7k
Q1403
2SA1576A
/QR
R1408 1.2k
R1410 390
Q1404
DTC144WUA
C1410 4.7/25
C1411 0.1
R1411 1.5k
Q1406
2SA1576A
/QR
R1412 OPEN
C1413 33p
L1403 6.8μ
C1412 68p
C1414 OPEN
R1413 470
C1415 0.1
R1414 820
Q1407
2SA1576A
/QR
GND
L1405 10μ
C1429 330/6.3
R1459 680
Q1420
2SC4081
/QRS
R1463 100
Q1421 OPEN
Q1418
2SA1576A
/QR
R1461 1K
R1462 OPEN
C1416 10/16
R1416 100k
R1417 100
Q1408
2SC4081/S
R1418 470
C1417 0.1
Q1417
2SC4081
/QRS
R1421 390
R1458 680
C1420 OPEN
C1421 33p
L1404 6.8μ
C1422 68p
Q1410
2SC4081
/QRS
R1425 OPEN
R1426 560
C1423 0.1
C1430 0.1
C1432 1
C1433 1
C1434 OPEN
R1434 15k
R1415 220
B1416 OPEN
VR1401
D/A LEVEL ADJ.
R1435 22k
R1436 6.8k
C1435 0.1
C1436 0.1
C1437 0.1
C1472 0.1
C1473 0.1
C1438 0.1
C1439 1
C1440 0.1
C1441 0.1
C1442 1
C1443 OPEN
R1437 3.9k
R1438 47k
R1439 27k
C1444 0.1
C1445 0.1
D1402 1SS133
R1440 47k
C1447 0.1
C1446 100/6.3
C1448 330/6.3
C1449 0.1
C1450 0.1
C1451 4.7/25
C1452 0.1
L1407 10μ
R1427 33k
C1424 0.01
R1428 39k
C1425 0.01
C1453 0.1
C1454 0.1
C1455 0.1
R1430 2.2k
R1432 1.8k
Q1412
2SC4081
/QRS
C1427 OPEN
L1406 33μ
R1431 820
Q1413
2SA1576A
/QR
C1471 0.1
R1429 1.5k
C1426 39p
C1428 22p
R1433 51
Y
C

05 3D DIGITAL/2M

4.9 TERMINAL SCHEMATIC DIAGRAM

NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



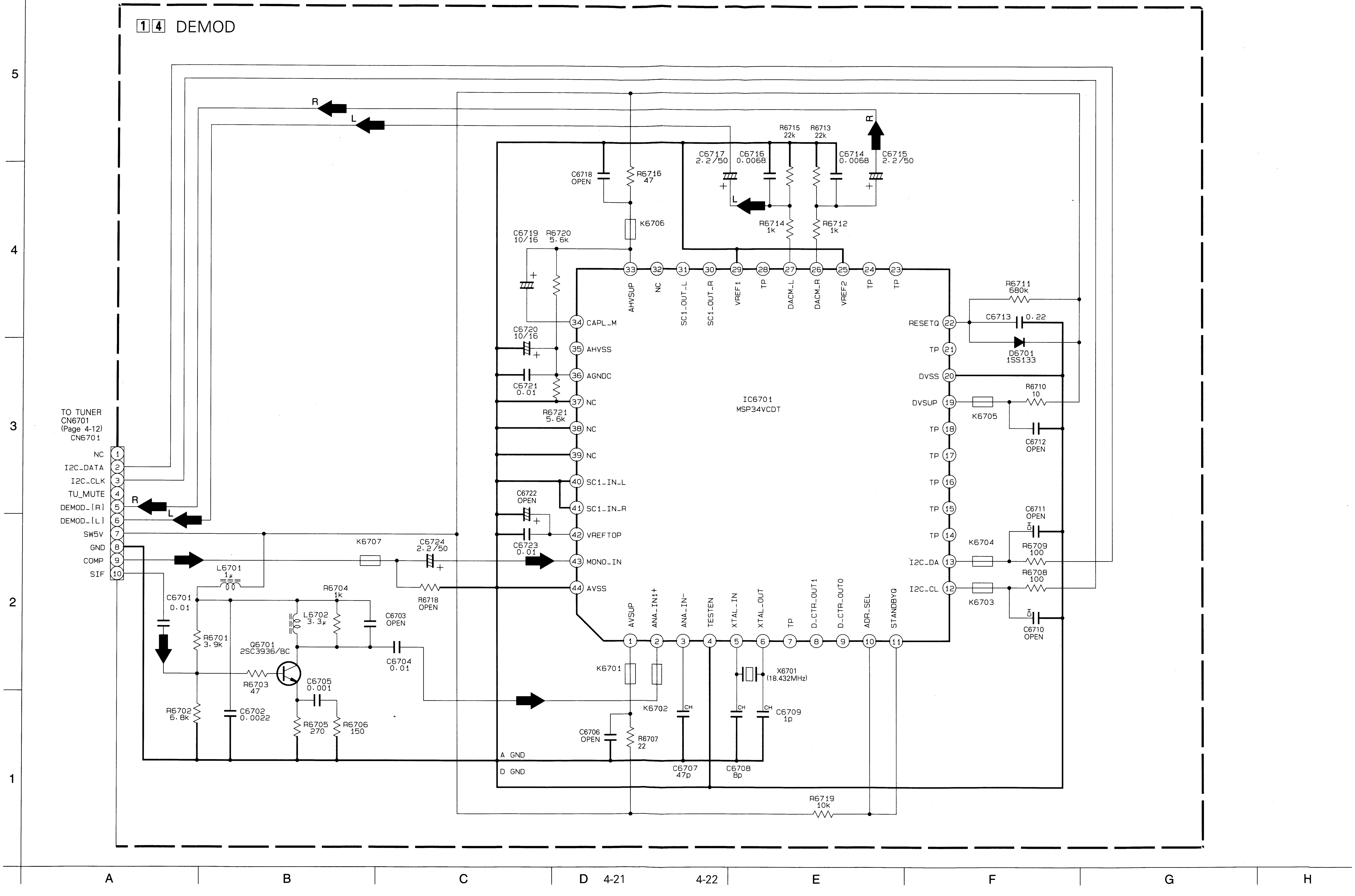
06 TERMINAL
TO MAIN CN918
GND 1
REAR_C 2
GND 3
REAR_Y 4
OPEN
TO CONNECTION CN907 (Page 4-14)
CN917
PAUSE/COMPU_I/O 10
GND 9
A.IN1[L] 8
A.IN1[R] 7
LINE_OUT[L] 6
LINE_OUT[R] 5
A.IN2[L] 4
A.IN2[R] 3
DEC_OUT[L] 2
DEC_OUT[R] 1
B905 OPEN
TO S-SUB CN512 (Page 4-23)
CN911
REAR1_Y_IN 14
GND 13
REAR1_C_IN 12
GND 11
REAR2_Y_IN 10
GND 9
REAR2_C_IN 8
GND 7
Y_OUT 6
GND 5
C_OUT 4
GND 3
V_FROM_OSD 2
BIAS_FOR_C_OUT 1
TO CONNECTION CN903 (Page 4-14)
CN913
SW5V 12
TU_VIDEO 11
SW12V 10
LINE_VIDEO2 9
CH+12V 8
SCR[H] 7
V_TO_OSD 6
GND 5
LINE_VIDEO1 4
NC 3
LI_5V 2
RF_VIDEO 1
TO CONNECTION CN905 (Page 4-14)
CN915
GND 5
GND 4
P50_I/O 3
I2C_CLK2 2
I2C_DATA2 1
J902 AV2/DECODER
J901 AV1 IN/OUT
IC901 BH7636S
CLAMP
BUFFER
DRIVER
I2C-BUS CONTROL
CURRENT LIMITER
IC201 LC74776 -9791
VDD1 RST CPDT CS2 SEP_IN SED_OUT COLR SYN_IN VDD1 CV_IN VSS2 CVOUT NC NC NC
VSS1 XTAL_IN MUTE CHABLK LN21 OSC_IN OSC_OUT SYNC_DET CST SCLK SDATA VDD2 NC NC NC
WF1
WF2
Q902 2SA1576A/QR
Q903 OPEN
Q901 UN5211
Q909 2SA1576A/QR
Q905
Q906
Q907
2SC4081/QRS
Q908 2SA1576A/QR
Q912 UN5215
Q911 UN521E
Q201
Q202
Q207 2SA1576A/QR
Q903 2SA1576A/QR
Q904 2SA1576A/QR
J913 A.OUT[R]
J912 A.OUT[L]
J904 S-IN
OPEN
J903 S-OUT
B904 OPEN
B902 OPEN
B901 SHORT
B201 0Ω
AV1-Y/C[H]
TO NAVI CN912
OPEN
1 SD_FROSD
2 SCLK_TOOSD
3 SD_TOOSD
4 CSOSD_SUB
5 GND
6 TXD
7 RXD
8 LANC_I/O
D205 OPEN
TO CONNECTION CN904 (Page 4-14)
CN914
1 SAT_CTL
2 P.MUTE[L]
3 SYNC_DET[H]
4 CHARA_DATA
5 OSD_CS
6 S.CLK
7 SD_FRSYS
8 SD_TOSYS
9 EDS_CS
10 STB
11 EDS[H]
12 2Fsc
D201 1.5kΩ
D202
D203
B215 OPEN
J923 JLIP
TXD 4
RXD 2
OPEN
J924 LANC
J925 SAT-CTL
R964 100
#J926 R.PAUSE
#R965 100

NOTES : 1. For TERMINAL waveforms, please refer to page 4-36.
2. Comparison chart of models & marks(#).

MODEL	REF NO.	J926	R965
	HR-S6700EK/EU	NOT USED	NOT USED
	HR-S7700EK/EU	USED	USED

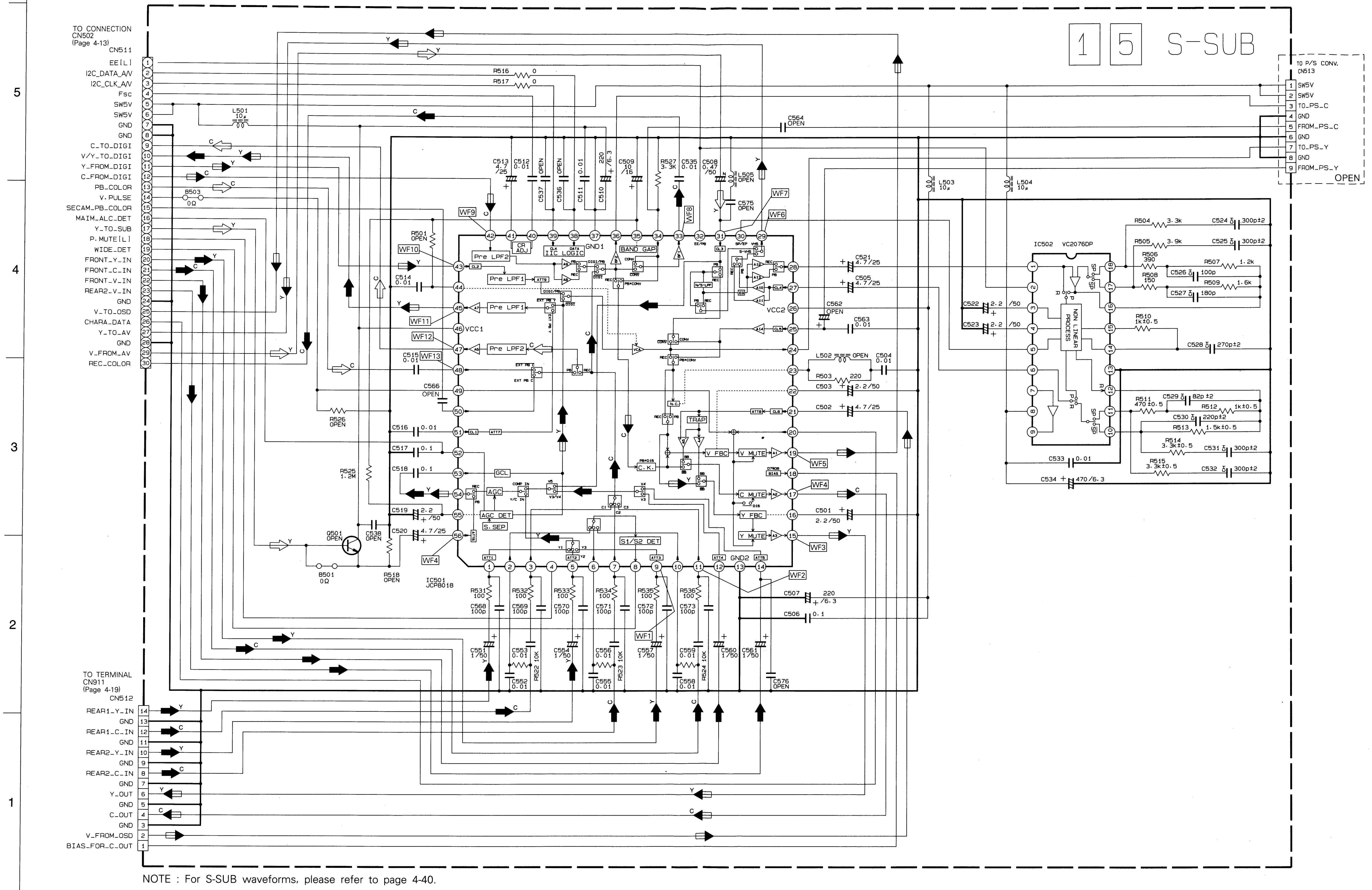
4.10 DEMODULATOR SCHEMATIC DIAGRAM

NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


1 4 DEMOD
TO TUNER
CN6701
(Page 4-12)
CN6701
1 NC
2 I2C_DATA
3 I2C_CLK
4 TU_MUTE
5 DEMOD_[R]
6 DEMOD_[L]
7 SW5V
8 GND
9 COMP
10 SIF
R
L
IC6701
MSP34VCDT
1 AVSUP
2 ANA_IN1+
3 ANA_IN-
4 TESTEN
5 XTAL_IN
6 XTAL_OUT
7 TP
8 D_CTR_OUT1
9 D_CTR_OUT0
10 ADR_SEL
11 STANDBYQ
12 I2C_CL
13 I2C_DA
14 TP
15 TP
16 TP
17 TP
18 TP
19 DVSUP
20 DVSS
21 TP
22 RESETQ
23 TP
24 TP
25 VREF2
26 DACM_R
27 DACM_L
28 TP
29 VREF1
30 SC1_OUT_R
31 SC1_OUT_L
32 NC
33 AHVSUP
34 CAPL_M
35 AHVSS
36 AGNDC
37 NC
38 NC
39 NC
40 SC1_IN_L
41 SC1_IN_R
42 VREFTOP
43 MONO_IN
44 AVSS
A GND
D GND
C6701 0.01
R6701 3.9k
R6702 6.8k
C6702 0.0022
L6701 1μ
L6702 3.3μ
R6704 1k
C6703 OPEN
C6704 0.01
Q6701 2SC3936/BC
R6703 47
C6705 0.001
R6705 270
R6706 150
K6707
C6724 2.2/50
R6718 OPEN
C6723 0.01
C6722 OPEN
C6721 0.01
R6721 5.6k
C6720 10/16
C6719 10/16
R6720 5.6k
K6706
C6718 OPEN
R6716 47
C6717 2.2/50
C6716 0.0068
R6715 22k
R6713 22k
C6714 0.0068
C6715 2.2/50
R6714 1k
R6712 1k
R6711 680k
C6713 0.22
D6701 1SS133
R6710 10
K6705
C6712 OPEN
C6711 OPEN
K6704
R6709 100
R6708 100
K6703
C6710 OPEN
CH
K6701
K6702
X6701 (18.432MHz)
C6709 1p
C6706 OPEN
R6707 22
C6707 47p
C6708 8p
R6719 10k
A
B
C
D 4-21
4-22
E
F
G
H
1
2
3
4
5

4.11 S-SUB SCHEMATIC DIAGRAM

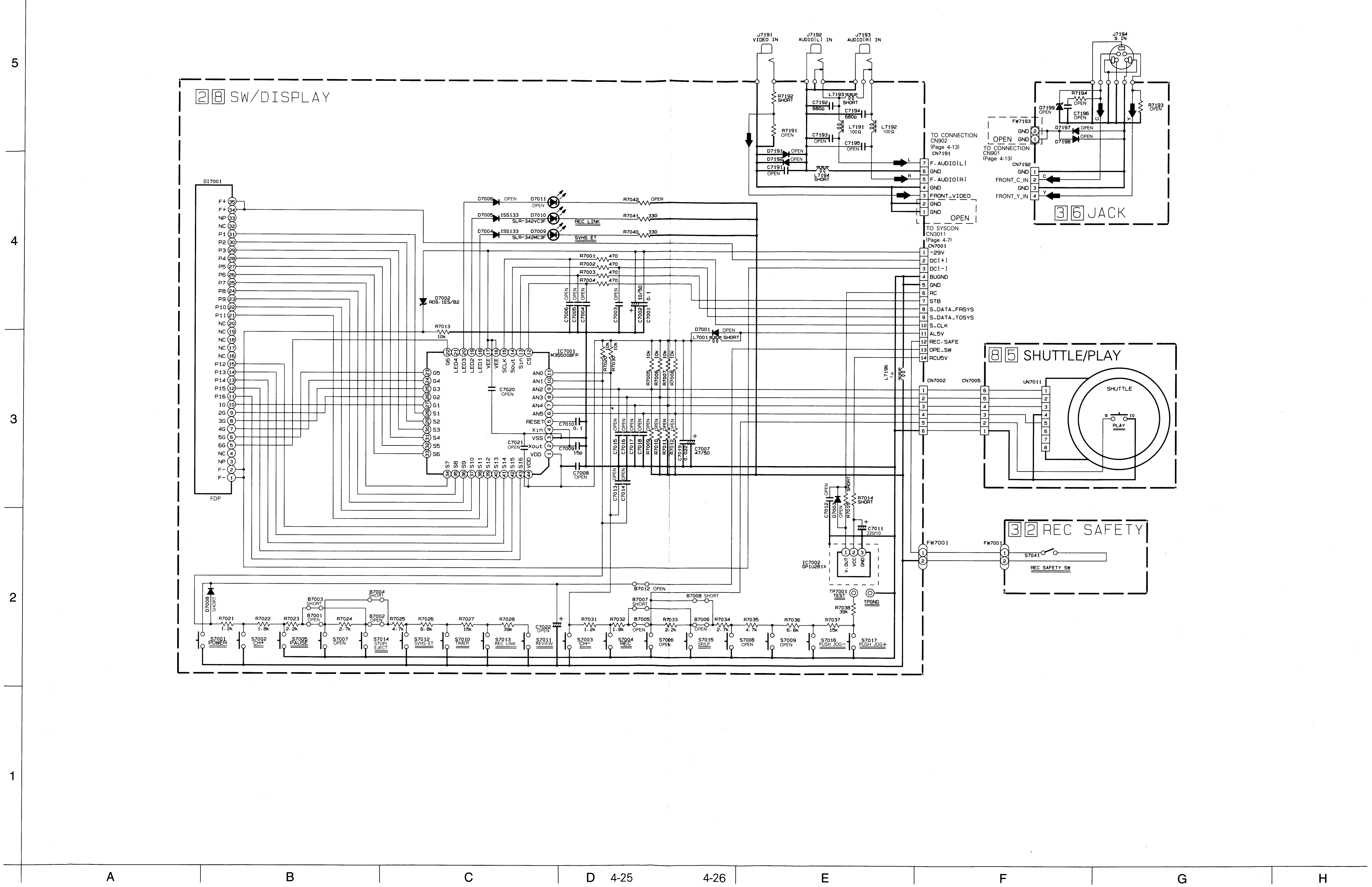
NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


1 5 S-SUB
TO CONNECTION CN502 (Page 4-13) CN511
1 EE[L]
2 I2C_DATA_A/V
3 I2C_CLK_A/V
4 Fsc
5 SW5V
6 SW5V
7 GND
8 GND
9 C_TO_DIGI
10 V/Y_TO_DIGI
11 Y_FROM_DIGI
12 C_FROM_DIGI
13 PB_COLOR
14 V.PULSE
15 SECAM_PB_COLOR
16 MAIM_ALC_DET
17 Y_TO_SUB
18 P.MUTE[L]
19 WIDE_DET
20 FRONT_Y_IN
21 FRONT_C_IN
22 FRONT_V_IN
23 REAR2_V_IN
24 GND
25 V_TO_OSD
26 CHARA_DATA
27 Y_TO_AV
28 GND
29 V_FROM_AV
30 REC_COLOR
TO TERMINAL CN911 (Page 4-19) CN512
14 REAR1_Y_IN
13 GND
12 REAR1_C_IN
11 GND
10 REAR2_Y_IN
9 GND
8 REAR2_C_IN
7 GND
6 Y_OUT
5 GND
4 C_OUT
3 GND
2 V_FROM_OSD
1 BIAS_FOR_C_OUT
TO P/S CONV. CN513
1 SW5V
2 SW5V
3 TO_PS_C
4 GND
5 FROM_PS_C
6 GND
7 TO_PS_Y
8 GND
9 FROM_PS_Y
OPEN
IC501 JCP8018
IC502 VC2076DP
NON LINEAR PROCESS
Q501 OPEN
B501 0Ω
B503 0Ω
L501 10µ
L503 10µ
L504 10µ
L505 OPEN
L502 OPEN
R516 0
R517 0
R501 OPEN
R518 OPEN
R525 1.2M
R526 OPEN
R527 3.3K
R503 220
R504 3.3k
R505 3.9k
R506 390
R507 1.2k
R508 150
R509 1.6k
R510 1k±0.5
R511 470±0.5
R512 1k±0.5
R513 1.5k±0.5
R514 3.3k±0.5
R515 3.3k±0.5
R522 10K
R523 10K
R524 10K
R531 100
R532 100
R533 100
R534 100
R535 100
R536 100
C501 2.2/50
C502 4.7/25
C503 2.2/50
C504 0.01
C505 4.7/25
C506 0.1
C507 220 /6.3
C508 0.47 /50
C509 10 /16
C510 220 /6.3
C511 0.01
C512 0.01
C513 4.7 /25
C514 0.01
C515 0.01
C516 0.01
C517 0.1
C518 0.1
C519 2.2 /50
C520 4.7/25
C521 4.7/25
C522 2.2 /50
C523 2.2 /50
C524 300p±2
C525 300p±2
C526 100p
C527 180p
C528 270p±2
C529 82p±2
C530 220p±2
C531 300p±2
C532 300p±2
C533 0.01
C534 470/6.3
C535 0.01
C536 OPEN
C537 OPEN
C538 OPEN
C551 1/50
C552 0.01
C553 0.01
C554 1/50
C555 0.01
C556 0.01
C557 1/50
C558 0.01
C559 0.01
C560 1/50
C561 1/50
C562 OPEN
C563 0.01
C564 OPEN
C566 OPEN
C568 100p
C569 100p
C570 100p
C571 100p
C572 100p
C573 100p
C575 OPEN
C576 OPEN
Pre LPF2
Pre LPF1
CR ADJ
IIC LOGIC
BAND GAP
GND1
GND2
VCC1
VCC2
GCL
AGC
AGC DET
S.SEP
S1/S2 DET
C.K.
TRAP
V FBC
V MUTE
C MUTE
Y FBC
Y MUTE
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
WF12
WF13
Y
C
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTE : For S-SUB waveforms, please refer to page 4-40.

4.12 SWITCH/DISPLAY, REC SAFETY, JACK AND SHUTTLE/PLAY SCHEMATIC DIAGRAMS [HR-S6700EK/EU]

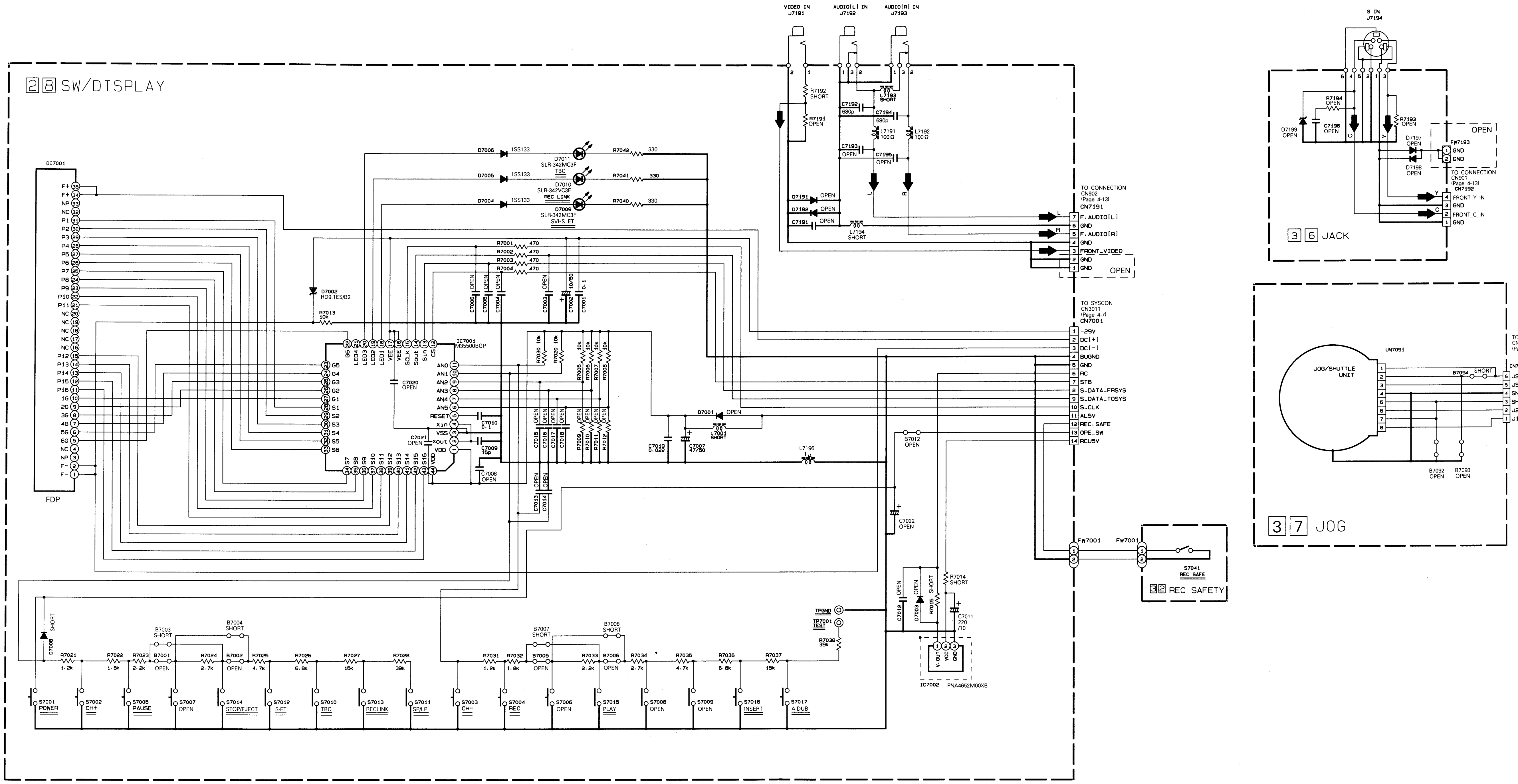
NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



28 SW/DISPLAY
32 REC SAFETY
85 SHUTTLE/PLAY
36 JACK
DI7001
FDP
IC7001 M35500BFP
IC7002 GP1U281X
V.OUT VCC GND
TO SYSCON CN3011 (Page 4-7)
CN7001
-29V
DC[+]
DC[-]
BUGND
GND
RC
STB
S_DATA_FRSYS
S_DATA_TOSYS
S_CLK
AL5V
REC.SAFE
OPE_SW
RCU5V
TO CONNECTION CN902 (Page 4-13) CN7191
F.AUDIO[L]
F.AUDIO[R]
FRONT_VIDEO
OPEN
TO CONNECTION CN901 (Page 4-13)
CN7192
FW7193
FRONT_C_IN
FRONT_Y_IN
J7191 VIDEO IN
J7192 AUDIO[L] IN
J7193 AUDIO[R] IN
J7194 S IN
CN7002
CN7005
UN7011
SHUTTLE
PLAY
FW7001
S7041
REC SAFETY SW
L7196
TP7001 TEST
TPGND
S7001 POWER
S7002 CH+
S7005 PAUSE
S7007 OPEN
S7014 STOP/EJECT
S7012 SVHS ET
S7010 TIMER
S7013 REC LINK
S7011 REVIEW
S7003 CH−
S7004 REC
S7006 OPEN
S7015 SP/LP
S7008 OPEN
S7009 OPEN
S7016 PUSH JOG−
S7017 PUSH JOG+
D7009 SLR-342MC3F
D7010 SLR-342VC3F
D7011
REC LINK
SVHS ET
D7002 RD9.1ES/B2
A
B
C
D
E
F
G
H
1
2
3
4
5

4.13 SWITCH/DISPLAY, REC SAFETY, JACK AND JOG SCHEMATIC DIAGRAMS [HR-S7700EK/EU]

NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

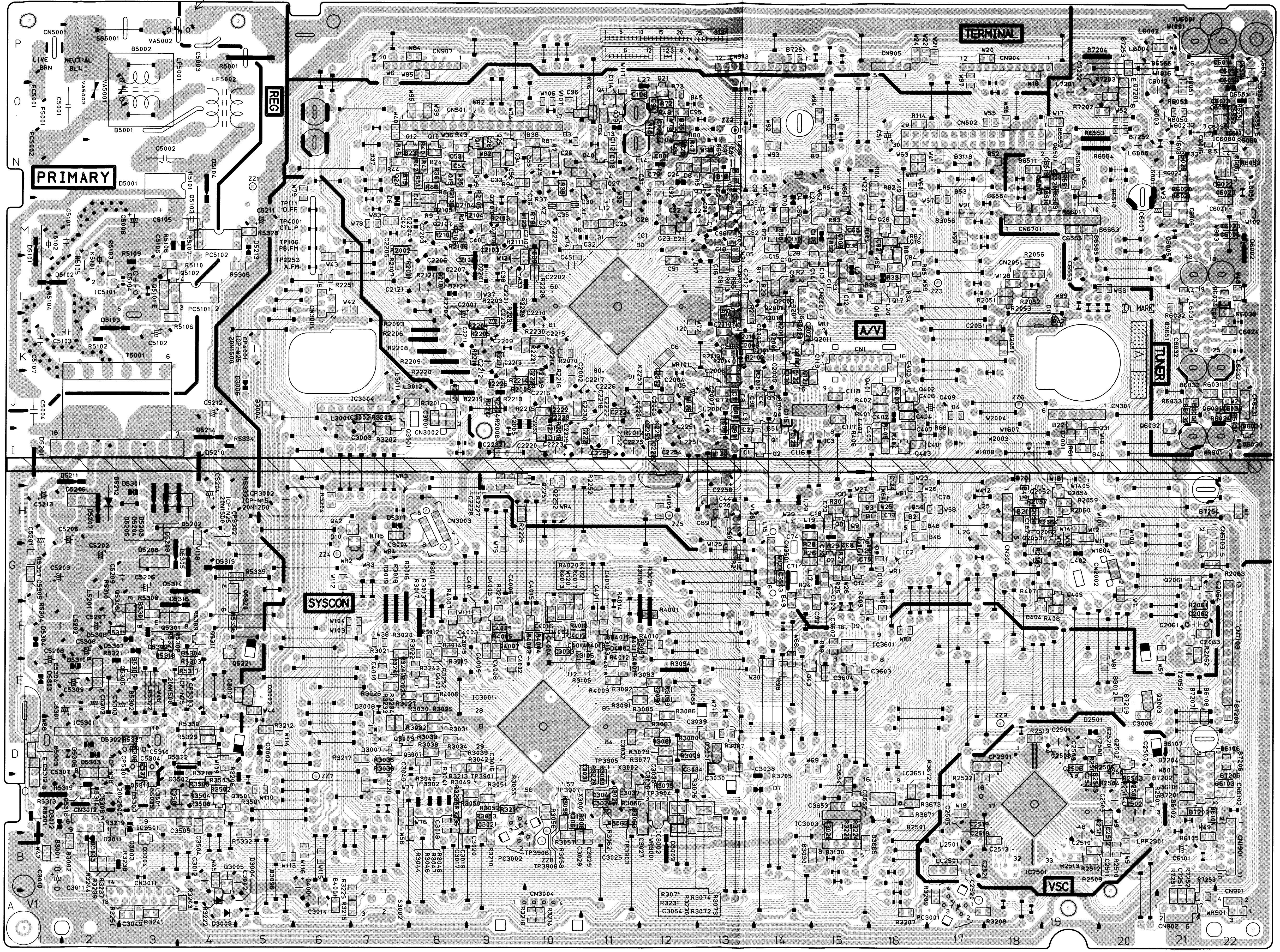


2 8 SW/DISPLAY
DI7001
FDP
F+ 35
F+ 34
NP 33
NC 32
P1 31
P2 30
P3 29
P4 28
P5 27
P6 26
P7 25
P8 24
P9 23
P10 22
P11 21
NC 20
NC 19
NC 18
NC 17
NC 16
P12 15
P13 14
P14 13
P15 12
P16 11
1G 10
2G 9
3G 8
4G 7
5G 6
6G 5
NC 4
NP 3
F- 2
F- 1
IC7001
M35500BGP
G6 LED4 LED3 LED2 LED1 VEE VEE SCLK Sout Sin CS
G5 G4 G3 G2 G1 S1 S2 S3 S4 S5 S6
AN0 AN1 AN2 AN3 AN4 AN5 RESET Xin VSS Xout VDD
S7 S8 S9 S10 S11 S12 S13 S14 S15 S16
C7020 OPEN
C7021 OPEN
C7010 0.1
C7009 15p
C7008 OPEN
D7002 RD9.1ES/B2
R7013 10k
D7006 1SS133
D7005 1SS133
D7004 1SS133
D7011 SLR-342MC3F TBC
D7010 SLR-342VC3F REC LINK
D7009 SLR-342MC3F SVHS ET
R7042 330
R7041 330
R7040 330
R7001 470
R7002 470
R7003 470
R7004 470
C7006 OPEN
C7005 OPEN
C7004 OPEN
C7003 OPEN
C7002 10/50
C7001 0.1
R7030 10k
R7020 10k
R7005 10k
R7006 10k
R7007 10k
R7008 10k
C7015 OPEN
C7016 OPEN
C7017 OPEN
C7018 OPEN
R7009 OPEN
R7010 OPEN
R7011 OPEN
R7012 OPEN
C7013 OPEN
C7014 OPEN
C7019 0.022
C7007 47/50
D7001 OPEN
L7001 SHORT
L7196
B7012 OPEN
C7022 OPEN
C7012 OPEN
D7003 OPEN
R7015 SHORT
R7014 SHORT
C7011 220 /10
TPGND
TP7001 TEST
R7038 39k
IC7002 PNA4652M00XB
V.OUT VCC GND
D7008 SHORT
R7021 1.2k
R7022 1.8k
R7023 2.2k
B7001 OPEN
B7003 SHORT
B7004 SHORT
R7024 2.7k
B7002 OPEN
R7025 4.7k
R7026 6.8k
R7027 15k
R7028 39k
R7031 1.2k
R7032 1.8k
B7005 OPEN
B7007 SHORT
B7008 SHORT
R7033 2.2k
B7006 OPEN
R7034 2.7k
R7035 4.7k
R7036 6.8k
R7037 15k
S7001 POWER
S7002 CH+
S7005 PAUSE
S7007 OPEN
S7014 STOP/EJECT
S7012 S-ET
S7010 TBC
S7013 RECLINK
S7011 SP/LP
S7003 CH−
S7004 REC
S7006 OPEN
S7015 PLAY
S7008 OPEN
S7009 OPEN
S7016 INSERT
S7017 A.DUB
VIDEO IN J7191
AUDIO[L] IN J7192
AUDIO[R] IN J7193
R7192 SHORT
R7191 OPEN
L7193 SHORT
C7192 680p
C7194 680p
L7191 100Ω
L7192 100Ω
C7193 OPEN
C7195 OPEN
D7191 OPEN
D7192 OPEN
C7191 OPEN
L7194 SHORT
L
R
TO CONNECTION CN902 (Page 4-13)
CN7191
7 F.AUDIO[L]
6 GND
5 F.AUDIO[R]
4 GND
3 FRONT_VIDEO
2 GND
1 GND
OPEN
TO SYSCON CN3011 (Page 4-7)
CN7001
1 -29V
2 DC[+]
3 DC[−]
4 BUGND
5 GND
6 RC
7 STB
8 S_DATA_FRSYS
9 S_DATA_TOSYS
10 S_CLK
11 AL5V
12 REC.SAFE
13 OPE_SW
14 RCU5V
FW7001
FW7001
S7041 REC SAFE
3 2 REC SAFETY
S IN J7194
R7194 OPEN
D7199 OPEN
C7196 OPEN
R7193 OPEN
D7197 OPEN
D7198 OPEN
C
Y
FW7193
1 GND
2 GND
TO CONNECTION CN901 (Page 4-13)
CN7192
4 FRONT_Y_IN
3 GND
2 FRONT_C_IN
1 GND
3 6 JACK
UN7091
JOG/SHUTTLE UNIT
B7094 SHORT
TO SYSCON CN3012 (Page 4-7)
CN7005
6 JSA/SHUTTLE_A
5 JSB/SHUTTLE_B
4 GND
3 SHUTTLE[L]/NC
2 J2/JOG_A
1 J1/JOG_B
B7092 OPEN
B7093 OPEN
3 7 JOG

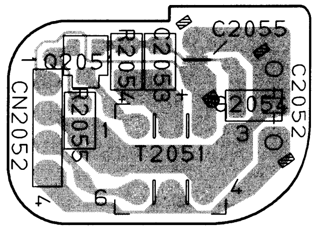
4.14 MAIN, AUDIO ERASE, A/C HEAD AND LOADING MOTOR CIRCUIT BOARDS

<03> MAIN
LPB10106-001B

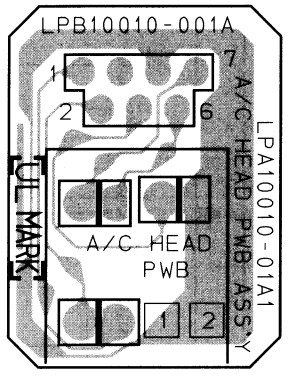
DANGEROUS VOLTAGE


PRIMARY
REG
TERMINAL
TUNER
A/V
SYSCON
VSC
LIVE
BRN
NEUTRAL
BLU
P
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

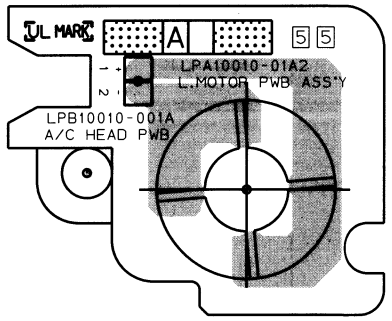
<46> AUDIO ERASE
LPB10106-001B


C2055
C2052
Q2051
R2054
C2053
R2055
CN2052
T2051

<12> A/C HEAD
LPB10010-001A


LPB10010-001A
LPA10010-01A1
A/C HEAD PWB ASS'Y
A/C HEAD
PWB
UL MARK

<55> LOADING MOTOR
LPB10010-001A


LPA10010-01A2
L.MOTOR PWB ASS'Y
LPB10010-001A
A/C HEAD PWB
A
55

COMPONENT PARTS LOCATION GUIDE <MAIN>

REF.NO.	LOCATION		
CAPACITOR			
C1	B	C	13I
C2	B	C	13I
C3	B	C	13J
C4	B	C	14J
C5	A	D	13J
C6	B	C	12K
C7	B	C	13J
C8	B	C	13J
C9	A	D	14M
C10	B	C	14L
C11	B	C	15L
C12	B	C	15L
C13	B	C	15L
C14	B	C	15L
C15	B	C	14M
C16	B	C	13L
C17	A	D	12M
C18	A	D	13M
C19	A	D	13M
C20	A	D	13M
C21	B	C	12M
C22	A	D	12M
C23	B	C	12M
C24	B	C	12N
C25	B	C	11M
C26	B	C	10N
C27	B	C	11N
C28	A	D	11M
C29	B	C	10N
C30	B	C	11N
C31	A	D	11N
C32	A	D	11M
C33	A	D	9N
C34	B	C	9N
C35	B	C	10M
C36	A	D	10N
C37	B	C	10M
C38	A	D	9L
C39	B	C	10M
C40	A	D	9M
C41	B	C	8M
C42	B	C	7M
C44	B	C	13H
C45	A	D	10L
C51	A	D	16N
C52	A	D	13M
C53	B	C	8N
C54	B	C	8N
C55	B	C	10N
C56	B	C	9N
C59	B	C	14L
C60	A	D	13H
C61	B	C	13L
C62	B	C	14M
C63	B	C	15M
C64	B	C	11O
C65	A	D	13K
C69	B	C	13H
C70	B	C	13H
C71	B	C	14G
C72	B	C	15G
C73	B	C	15H
C74	B	C	14H
C75	B	C	15G
C76	B	C	15H
C77	B	C	16H
C78	B	C	17H
C79	B	C	12N
C80	B	C	12N
C81	B	C	13N
C82	B	C	16M
C84	B	C	16L
C87	B	C	13I
C88	B	C	13J
C89	B	C	13J
C90	B	C	13J
C91	B	C	12L
C92	B	C	12N
C93	B	C	15G
C94	B	C	12O
C95	B	C	12O
C96	B	C	10O
C98	A	D	13M
C103	B	C	15G
C104	B	C	12O
C105	B	C	12O
C106	B	C	15M
C107	B	C	18H
C108	B	C	11O
C109	B	C	15M
C110	B	C	14M
C112	B	C	11N
C113	B	C	11N
C114	B	C	11O
C115	B	C	14J
C116	B	C	14I
C117	B	C	15J
C118	B	C	15J
C119	B	C	15J
C120	B	C	14J

REF.NO.	LOCATION		
C121	B	C	14J
C122	B	C	14J
C123	B	C	14I
C124	B	C	16I
C129	B	C	15G
C130	B	C	16G
C401	B	C	16I
C402	B	C	16J
C403	B	C	16K
C404	B	C	16J
C405	B	C	16I
C406	B	C	16J
C407	B	C	16J
C409	A	D	16J
C2001	A	D	9K
C2002	A	D	10K
C2003	A	D	12J
C2004	B	C	12J
C2005	A	D	14J
C2006	B	C	13J
C2007	A	D	13J
C2008	A	D	13K
C2009	B	C	13K
C2010	B	C	13K
C2011	A	D	14L
C2012	A	D	13L
C2013	B	C	13K
C2021	B	C	14K
C2051	B	C	18K
C2061	A	D	21F
C2062	B	C	21F
C2063	B	C	21F
C2064	A	D	21G
C2101	A	D	14K
C2102	A	D	9M
C2103	B	C	9M
C2104	B	C	9L
C2121	A	D	8L
C2201	B	C	9L
C2202	B	C	10L
C2203	A	D	8M
C2204	A	D	8M
C2205	A	D	8M
C2206	A	D	8M
C2207	A	D	8L
C2208	A	D	9K
C2209	A	D	9K
C2210	A	D	10K
C2211	A	D	8K
C2212	A	D	9K
C2213	A	D	9J
C2214	A	D	10K
C2215	A	D	10K
C2216	A	D	10J
C2217	A	D	10J
C2218	A	D	11J
C2219	A	D	10J
C2220	A	D	10I
C2221	B	C	11I
C2222	A	D	11I
C2223	A	D	11I
C2224	B	C	11J
C2225	A	D	11I
C2226	A	D	11J
C2227	B	C	12I
C2228	B	C	9I
C2229	B	C	10J
C2230	B	C	10J
C2231	B	C	10M
C2232	B	C	9I
C2233	B	C	10I
C2251	A	D	12J
C2252	B	C	12J
C2253	B	C	12I
C2254	B	C	12I
C2255	B	C	11I
C2256	A	D	13I
C2501	A	D	19D
C2502	B	C	20C
C2503	A	D	20C
C2504	B	C	19C
C2505	A	D	17B
C2506	B	C	19D
C2507	A	D	20D
C2508	B	C	19D
C2509	A	D	19D
C2510	A	D	19B
C2511	B	C	20B
C2512	B	C	20C
C2513	B	C	18B
C2518	B	C	17C
C2519	B	C	17C
C2520	B	C	17B
C2521	A	D	17B
C3001	B	C	8J
C3002	B	C	7J
C3003	A	D	7J
C3004	B	C	7H
C3007	B	C	5E
C3008	B	C	20E
C3010	A	D	1B
C3011	A	D	1B

REF.NO.	LOCATION		
C3012	A	D	4B
C3014	A	D	6A
C3015	B	C	8F
C3016	B	C	9D
C3017	B	C	8C
C3018	B	C	8C
C3019	B	C	8C
C3020	B	C	9C
C3021	B	C	9C
C3022	B	C	15C
C3024	B	C	11C
C3025	A	D	11C
C3026	B	C	11C
C3027	B	C	12C
C3028	B	C	10B
C3029	B	C	11B
C3030	B	C	13D
C3031	B	C	11D
C3032	B	C	11D
C3033	B	C	10F
C3034	B	C	12D
C3035	B	C	12D
C3036	B	C	12C
C3037	B	C	11C
C3038	B	C	13D
C3039	B	C	13D
C3040	A	D	8D
C3041	B	C	11C
C3042	A	D	5B
C3049	B	C	3A
C3054	B	C	12C
C3501	B	C	3C
C3502	A	D	4C
C3503	B	C	14G
C3504	B	C	4C
C3505	B	C	4C
C3602	B	C	15F
C3603	B	C	15E
C3604	B	C	15E
C3652	B	C	15C
C3653	B	C	15C
C3654	B	C	15C
C4001	A	D	6B
C4002	B	C	9E
C4003	B	C	9F
C4004	B	C	10F
C4005	B	C	9F
C4006	B	C	9F
C4007	B	C	9F
C4008	B	C	9F
C4009	B	C	9F
C4010	B	C	7E
C4011	B	C	11F
C4012	B	C	11F
C4013	B	C	10F
C4014	B	C	10F
C4015	B	C	10F
C4016	B	C	10F
C4017	B	C	9F
C5001	A	D	2O
C5002	A	D	4N
C5003	A	D	4P
C5004	A	D	1J
C5006	A	D	3M
C5101	A	D	2M
C5102	A	D	3K
C5103	A	D	1K
C5104	A	D	3L
C5105	A	D	3M
C5106	A	D	3L
C5107	A	D	1K
C5201	A	D	1G
C5202	A	D	2G
C5203	A	D	1G
C5204	A	D	4H
C5205	A	D	2H
C5206	A	D	3G
C5207	A	D	2F
C5208	A	D	1E
C5209	A	D	3G
C5211	A	D	5M
C5212	A	D	4J
C5213	A	D	1H
C5301	A	D	2D
C5302	A	D	2E
C5303	A	D	3E
C5304	A	D	3D
C5305	B	C	1G
C5306	A	D	2C
C5307	A	D	2C
C5308	A	D	2F
C5309	A	D	2E
C5310	A	D	3D
C6005	A	D	21M
C6006	B	C	22M
C6007	A	D	20M
C6008	B	C	21M
C6012	A	D	21O
C6013	B	C	22O
C6014	B	C	22P
C6016	B	C	21O
C6020	B	C	22N

REF.NO.	LOCATION		
C6021	B	C	22M
C6022	B	C	22N
C6023	B	C	22M
C6024	B	C	22K
C6032	B	C	21K
C6033	B	C	22J
C6037	B	C	22L
C6052	B	C	22O
C6053	B	C	22P
C6054	B	C	22P
C6055	B	C	22O
C6101	A	D	21B
C6519	B	C	19N
C6520	B	C	19N
C6551	A	D	22P
C6552	B	C	22O
C6553	A	D	19L
C6554	B	C	22P
C6555	B	C	19M
C7202	A	D	19O
C7251	B	C	21A
CONNECTOR			
CN1	A	D	15K
CN301	A	D	20J
CN302	A	D	18H
CN501	A	D	7O
CN502	A	D	18O
CN901	A	D	22A
CN902	A	D	21A
CN903	A	D	14P
CN904	A	D	19P
CN905	A	D	16P
CN907	A	D	8P
CN1901	A	D	22C
CN2001	A	D	14L
CN2002	A	D	20G
CN2051	A	D	18L
CN3001	A	D	6L
CN3002	A	D	8J
CN3003	A	D	8H
CN3004	A	D	10A
CN3011	A	D	3A
CN3012	A	D	2C
CN3501	A	D	14H
CN5001	A	D	1P
CN6102	A	D	21C
CN6103	A	D	21H
CN6701	A	D	18M
CN7103	A	D	22E
DIODE			
D1	B	C	19K
D3	B	C	10O
D4	A	D	14M
D5	B	C	13M
D6	A	D	7N
D7	A	D	13C
D8	A	D	12N
D9	B	C	15F
D10	B	C	7H
D2001	B	C	18I
D2121	A	D	8L
D2201	A	D	9M
D2501	A	D	20D
D3001	A	D	13D
D3002	A	D	5D
D3003	A	D	3B
D3004	A	D	4A
D3005	A	D	4A
D3006	A	D	5J
D3007	B	C	7D
D3008	B	C	7D
D3009	A	D	12B
D3011	A	D	2B
D3012	A	D	1C
D4001	B	C	11E
D4002	B	C	11F
D5001	B	C	3N
D5101	A	D	1L
D5102	A	D	2L
D5103	A	D	2K
D5104	A	D	4N
D5201	A	D	1I
D5202	A	D	4H
D5203	A	D	4I
D5204	A	D	3I
D5205	A	D	3I
D5206	A	D	2H
D5207	A	D	2H
D5208	A	D	3G
D5209	A	D	3H
D5210	A	D	4I
D5211	A	D	1I
D5212	A	D	2I
D5213	A	D	5L
D5214	A	D	4I
D5301	A	D	3H
D5302	A	D	2D
D5303	A	D	1E
D5304	A	D	1F
D5305	A	D	4G
D5306	A	D	2D

REF.NO.	LOCATION		
D5307	A	D	3F
D5308	A	D	2F
D5309	A	D	3C
D5310	A	D	2E
D5314	A	D	3G
D5315	A	D	5G
D5316	A	D	3F
D5317	A	D	7H
D6002	A	D	22L
D6551	A	D	22O
IC			
IC1	B	C	11L
IC2	B	C	16H
IC3	B	C	14J
IC2501	B	C	18C
IC3001	B	C	10D
IC3002	B	C	12C
IC3003	A	D	15C
IC3004	A	D	7J
IC3501	A	D	4C
IC3601	B	C	15F
IC3651	B	C	16C
IC5101	A	D	2L
IC5301	A	D	1D
IC6080	B	C	22N
COIL			
L1	A	D	13J
L2	A	D	15L
L3	A	D	14N
L4	A	D	11N
L5	A	D	9M
L11	A	D	11N
L12	A	D	11M
L13	A	D	11O
L14	A	D	12N
L15	A	D	14H
L17	A	D	15G
L18	A	D	15H
L19	A	D	15H
L20	A	D	16L
L22	A	D	12M
L24	A	D	15M
L25	A	D	18H
L26	A	D	18H
L27	A	D	12O
L28	A	D	14M
L29	A	D	14H
L401	A	D	16J
L402	A	D	19G
L2001	A	D	12J
L2251	A	D	13I
L2252	A	D	11I
L2501	A	D	17B
L3001	A	D	6J
L3011	A	D	7J
L3012	A	D	7J
L3501	A	D	3C
L5201	A	D	2G
L5202	A	D	1F
L6001	A	D	20N
L6002	A	D	21P
L6003	A	D	21O
L6004	A	D	20P
L6005	A	D	20N
L6031	B	C	21L
L6032	A	D	22J
L6050	A	D	22N
L7201	A	D	19O
TRANSISTOR			
Q1	B	C	14I
Q2	B	C	14I
Q3	B	C	14J
Q4	B	C	14J
Q5	B	C	13L
Q7	B	C	15G
Q8	B	C	15H
Q9	B	C	15H
Q10	B	C	8N
Q11	B	C	9N
Q12	B	C	8N
Q13	B	C	8N
Q14	B	C	15G
Q16	B	C	16L
Q17	B	C	16L
Q18	B	C	16M
Q21	B	C	12O
Q24	B	C	7N
Q25	B	C	9N
Q26	B	C	9N
Q28	B	C	16M
Q31	B	C	19I
Q32	B	C	13M
Q34	B	C	12N
Q35	B	C	13M
Q37	B	C	13N
Q38	B	C	15M
Q39	B	C	11O
Q40	B	C	11N
Q41	B	C	11O
Q42	B	C	7H

REF.NO.	LOCATION		
Q43	B	C	14E
Q401	B	C	16J
Q402	B	C	16J
Q403	B	C	16I
Q404	B	C	18F
Q405	B	C	19G
Q2001	B	C	14L
Q2002	B	C	14K
Q2003	B	C	14L
Q2004	B	C	14K
Q2011	B	C	14K
Q2052	B	C	18H
Q2053	B	C	18H
Q2054	B	C	19H
Q2061	B	C	21G
Q2062	B	C	19H
Q2102	B	C	14K
Q2103	B	C	9M
Q2104	B	C	8M
Q2105	B	C	8M
Q2106	B	C	8M
Q2107	B	C	8M
Q2108	B	C	9M
Q2251	B	C	10I
Q2252	B	C	10I
Q2501	B	C	20D
Q2502	B	C	20D
Q3001	B	C	7J
Q3002	A	D	5E
Q3003	A	D	20E
Q3004	B	C	3B
Q3005	B	C	4B
Q3007	B	C	7D
Q3009	B	C	7D
Q3501	B	C	4C
Q4001	B	C	8E
Q4002	B	C	10F
Q4003	B	C	9F
Q5101	A	D	3L
Q5102	B	C	3L
Q5103	B	C	4M
Q5301	A	D	3F
Q5302	B	C	3F
Q5303	A	D	2D
Q5304	A	D	2E
Q5305	B	C	3E
Q5306	A	D	3F
Q5310	B	C	3C
Q5311	B	C	4F
Q5312	A	D	1D
Q5318	B	C	2C
Q5320	A	D	4G
Q5321	B	C	4F
Q5322	B	C	4D
Q6030	B	C	22I
Q6031	B	C	22J
Q6032	B	C	21J
Q6501	B	C	19N
Q6502	B	C	18N
Q6551	A	D	22O
Q7201	A	D	20P
RESISTOR			
R1	B	C	14L
R2	B	C	14L
R3	B	C	15L
R4	B	C	12N
R5	B	C	12N
R6	B	C	11M
R7	B	C	10N
R8	B	C	8M
R9	B	C	8M
R21	B	C	13G
R22	B	C	13G
R23	B	C	14L
R24	B	C	14G
R25	B	C	15G
R26	B	C	14G
R27	B	C	15G
R28	B	C	14H
R29	B	C	15G
R30	B	C	15H
R31	B	C	15H
R32	B	C	15G
R33	B	C	16L
R34	B	C	16L
R35	B	C	15L
R36	B	C	8N
R37	B	C	10N
R38	B	C	10N
R39	B	C	9N
R40	B	C	8N
R41	B	C	8N
R42	B	C	8N
R43	B	C	8N
R44	B	C	7N
R45	B	C	7N
R46	B	C	12O
R47	B	C	12N
R48	B	C	12O
R51	B	C	8N
R54	B	C	15M

REF.NO.	LOCATION		
R61	B	C	19I
R62	B	C	16M
R65	B	C	13L
R66	B	C	13M
R68	B	C	17I
R69	B	C	13N
R70	B	C	14M
R72	B	C	12O
R73	B	C	12O
R75	B	C	14M
R76	B	C	11O
R77	B	C	13J
R79	B	C	10M
R80	B	C	12O
R81	B	C	10N
R82	B	C	16M
R84	B	C	16N
R85	B	C	16L
R88	B	C	8N
R90	B	C	14M
R91	B	C	13N
R92	B	C	15M
R93	B	C	15M
R94	B	C	9N
R98	B	C	14E
R99	B	C	15E
R104	B	C	15M
R113	B	C	13L
R114	B	C	16O
R115	B	C	7G
R401	B	C	16J
R402	B	C	16J
R403	B	C	16J
R404	B	C	16I
R405	B	C	16I
R406	B	C	16I
R407	B	C	19G
R408	B	C	19F
R409	B	C	15F
R2001	B	C	7L
R2002	B	C	7M
R2003	A	D	7K
R2005	A	D	9I
R2006	A	D	10I
R2007	B	C	8J
R2008	B	C	9J
R2009	B	C	10J
R2010	B	C	10K
R2011	B	C	14K
R2012	B	C	11I
R2013	B	C	13K
R2014	B	C	13K
R2015	B	C	14J
R2016	B	C	13K
R2017	B	C	13K
R2018	B	C	14K
R2019	B	C	14K
R2020	B	C	14K
R2051	B	C	18L
R2052	B	C	18L
R2053	B	C	18L
R2056	B	C	18L
R2057	B	C	18H
R2058	B	C	18H
R2059	B	C	19H
R2060	B	C	19H
R2061	B	C	21F
R2062	B	C	21F
R2063	B	C	21G
R2064	B	C	19H
R2065	B	C	18G
R2102	B	C	13K
R2103	B	C	9M
R2104	B	C	9M
R2105	B	C	9M
R2106	B	C	8M
R2107	B	C	7L
R2108	B	C	8M
R2109	B	C	8M
R2110	B	C	8M
R2111	B	C	9M
R2121	A	D	8L
R2202	B	C	8K
R2203	B	C	9K
R2204	B	C	9K
R2205	B	C	9K
R2206	A	D	7K
R2208	A	D	8K
R2209	A	D	8K
R2210	B	C	9K
R2211	B	C	9K
R2212	B	C	9J
R2213	A	D	9J
R2214	B	C	9J
R2215	B	C	10J
R2216	A	D	10J
R2217	B	C	10I
R2218	B	C	10I
R2219	A	D	9J
R2220	A	D	9J
R2221	B	C	10K
R2222	B	C	10J

REF.NO.	LOCATION		
R2223	B	C	10J
R2224	B	C	9J
R2225	B	C	9J
R2226	B	C	9H
R2227	B	C	9I
R2228	B	C	10L
R2229	A	D	10L
R2230	B	C	10K
R2231	A	D	9L
R2251	B	C	6L
R2252	B	C	11I
R2501	B	C	20C
R2502	B	C	20C
R2503	B	C	20C
R2504	B	C	20C
R2505	B	C	19C
R2506	B	C	20D
R2507	B	C	19D
R2508	B	C	19D
R2509	B	C	19B
R2510	B	C	20B
R2511	B	C	19C
R2512	B	C	19B
R2513	B	C	19B
R2514	B	C	20C
R2519	B	C	18D
R2520	B	C	20D
R2522	B	C	17C
R3011	A	D	8F
R3012	B	C	8F
R3013	B	C	8F
R3014	B	C	8F
R3015	B	C	8E
R3016	A	D	7F
R3017	A	D	8F
R3018	A	D	7F
R3019	A	D	7F
R3020	B	C	7F
R3021	B	C	7F
R3022	B	C	8E
R3025	B	C	7E
R3026	B	C	7E
R3027	B	C	7E
R3029	B	C	8E
R3030	B	C	8E
R3031	B	C	8D
R3032	B	C	8D
R3033	B	C	8D
R3034	B	C	8D
R3035	B	C	7D
R3036	B	C	7D
R3038	B	C	8D
R3039	B	C	8D
R3040	B	C	8D
R3041	B	C	8D
R3042	B	C	9D
R3044	A	D	8C
R3046	A	D	8C
R3047	A	D	8C
R3048	A	D	8C
R3049	B	C	9C
R3050	B	C	9C
R3051	B	C	9C
R3052	B	C	9C
R3053	B	C	9C
R3054	B	C	10C
R3055	B	C	9C
R3056	B	C	10C
R3057	B	C	10B
R3058	B	C	10C
R3059	B	C	10C
R3060	B	C	10C
R3061	B	C	11C
R3062	B	C	11C
R3063	B	C	11C
R3066	B	C	11C
R3069	B	C	11C
R3071	B	C	12C
R3072	B	C	13C
R3073	B	C	13C
R3074	B	C	13C
R3075	B	C	12C
R3076	B	C	12C
R3077	B	C	12D
R3078	B	C	12D
R3079	B	C	12D
R3080	B	C	12D
R3081	B	C	12D
R3083	B	C	12D
R3085	B	C	12D
R3086	B	C	12E
R3087	B	C	13D
R3088	B	C	12E
R3089	B	C	12E
R3090	B	C	12E
R3091	B	C	12E
R3092	B	C	12E
R3093	B	C	12E
R3094	A	D	12E
R3095	A	D	12F
R3096	A	D	12F
R3097	B	C	12F

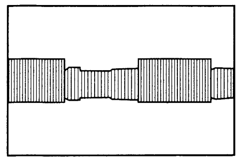
REF.NO.	LOCATION		
R3103	B	C	11F
R3105	B	C	11E
R3106	B	C	11F
R3201	B	C	8J
R3202	B	C	7I
R3203	B	C	7J
R3204	B	C	6H
R3205	A	D	14C
R3206	A	D	5C
R3207	B	C	16A
R3208	B	C	17A
R3209	B	C	17A
R3210	B	C	9B
R3211	B	C	9C
R3212	B	C	5D
R3213	B	C	8D
R3214	B	C	10A
R3215	B	C	7A
R3216	B	C	10A
R3217	B	C	7D
R3218	A	D	4D
R3219	B	C	2B
R3220	B	C	7C
R3222	B	C	4A
R3223	B	C	15C
R3224	B	C	15C
R3225	B	C	7A
R3229	B	C	11C
R3230	B	C	12C
R3231	B	C	12C
R3233	B	C	7D
R3234	B	C	7D
R3235	B	C	8C
R3236	B	C	8C
R3237	B	C	2B
R3238	A	D	2B
R3239	B	C	2B
R3241	B	C	3A
R3242	B	C	8F
R3243	B	C	4A
R3244	B	C	2B
R3245	B	C	9F
R3246	B	C	7E
R3247	B	C	7E
R3251	B	C	3A
R3252	B	C	8F
R3501	B	C	4C
R3502	B	C	4C
R3503	B	C	4C
R3504	B	C	4C
R3505	B	C	4C
R3506	B	C	4C
R3671	B	C	16C
R3672	B	C	16C
R3673	B	C	16C
R4001	B	C	12F
R4003	B	C	10F
R4004	B	C	10F
R4005	B	C	9F
R4007	B	C	8F
R4008	B	C	8E
R4009	B	C	11E
R4010	B	C	12F
R4011	B	C	11F
R4012	B	C	11F
R4013	B	C	10F
R4014	B	C	11F
R4015	B	C	11F
R4016	B	C	11E
R4017	B	C	10F
R4018	B	C	10F
R4019	B	C	11F
R4020	B	C	10G
R4021	B	C	10G
R5001	A	D	4P
R5101	A	D	4N
R5102	A	D	2K
R5103	B	C	2L
R5104	A	D	1L
R5105	A	D	2L
R5106	B	C	3K
R5107	A	D	4M
R5108	A	D	3M
R5109	A	D	3L
R5110	B	C	3L
R5301	A	D	1C
R5302	B	C	3F
R5303	B	C	4E
R5304	A	D	1G
R5305	B	C	5L
R5306	B	C	3D
R5307	B	C	1G
R5308	B	C	3F
R5309	A	D	3F
R5310	B	C	2F
R5311	B	C	2F
R5313	A	D	1C
R5314	B	C	2C
R5317	B	C	4E
R5318	B	C	3F
R5319	A	D	2C
R5321	A	D	3E

REF.NO.	LOCATION		
R5322	B	C	3E
R5323	B	C	3F
R5326	B	C	3D
R5327	B	C	3D
R5328	B	C	5M
R5329	B	C	4D
R5330	B	C	4D
R5332	B	C	5B
R5333	A	D	4H
R5334	A	D	5I
R5335	B	C	5G
R5336	B	C	4F
R6020	B	C	21N
R6021	B	C	21N
R6022	B	C	21N
R6025	B	C	21N
R6030	B	C	22J
R6031	B	C	22J
R6032	B	C	21L
R6033	B	C	21J
R6034	B	C	22J
R6038	B	C	22L
R6050	B	C	21O
R6051	B	C	21O
R6052	B	C	21O
R6053	B	C	22N
R6060	B	C	22N
R6061	B	C	22N
R6508	B	C	19N
R6509	B	C	19N
R6510	B	C	19N
R6511	B	C	19N
R6551	A	D	22O
R6552	B	C	22O
R6553	A	D	20O
R6554	A	D	20N
R6601	B	C	18M
R7202	B	C	20O
R7203	B	C	20O
R7204	A	D	19P
R7251	B	C	21A
R7252	B	C	21A
R7253	B	C	21A
TEST POINT			
TP106	A	D	6M
TP111	A	D	6M
TP2253	A	D	6L
TP3901	B	C	9C
TP3902	B	C	8C
TP3903	B	C	11C
TP3904	B	C	12C
TP3905	B	C	11C
TP3906	B	C	10C
TP3907	B	C	10C
TP3908	B	C	10C
TP4001	A	D	6M
OTHER			
CF2501	A	D	17D
CF6031	A	D	22J
CP3002	A	D	6H
CP4001	A	D	5K
CP5301	A	D	2D
CP5302	A	D	4H
CP5303	A	D	4E
F5001	A	D	1P
FC5001	A	D	1P
FC5002	A	D	1N
K2251	B	C	12J
K2252	B	C	12I
K2253	B	C	12J
K5101	A	D	2L
K5102	A	D	1M
LC2501	A	D	17B
LF5001	A	D	2P
LF5002	A	D	5O
LPF2501	A	D	20C
PC3001	A	D	17A
PC3002	A	D	9C
PC5101	A	D	4L
PC5102	A	D	5M
S3002	A	D	7A
SG5001	A	D	2P
T2052	A	D	21F
T5001	A	D	2J
TU6001	A	D	21P
VA5001	A	D	2P
VA5002	A	D	4P
VA5003	A	D	2P
WR1	A	D	16G
WR2	A	D	7G
WR3	A	D	7G
WR4	A	D	7G
WR101	A	D	14J
WR901	A	D	21A
WR3001	A	D	12C
X1	A	D	10N
X2	A	D	10M
X3001	A	D	11C
X3002	A	D	11C

WAVEFORMS

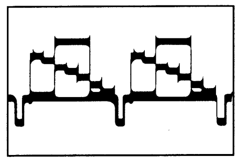
— VIDEO/AUDIO —

WF1 IC1-1



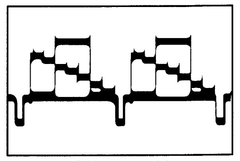
PB 0.3 Vp-p
20 mV/5 msec/DIV

WF2 IC1-11



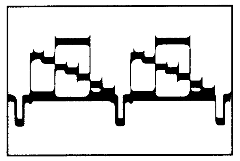
REC/PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF3 IC1-13



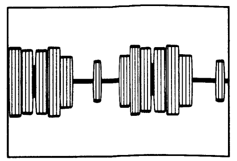
REC/PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF4 IC1-14



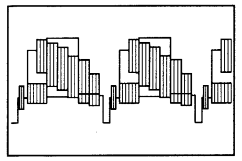
PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF5 IC1-16



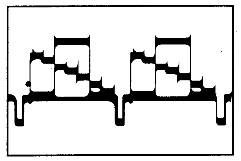
REC 0.58 Vp-p
20 mV/20 µsec/DIV

WF6 IC1-18



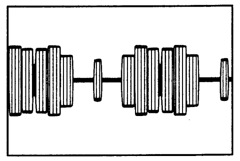
REC 0.96 Vp-p
20 mV/20 µsec/DIV

WF7 IC1-27



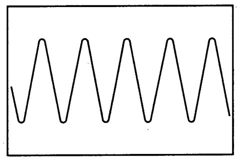
PB 2.1 Vp-p
50 mV/20 µsec/DIV

WF8 IC1-30



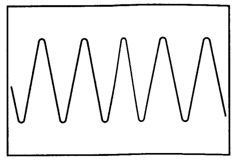
PB 0.68 Vp-p
20 mV/20 µsec/DIV

WF9 IC1-48



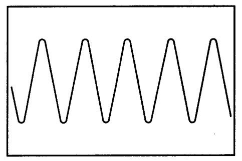
PB 0.48 Vp-p
10 mV/0.5 msec/DIV

WF10 IC1-52



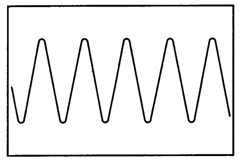
REC 0.11 Vp-p
2 mV/0.5 msec/DIV

WF11 IC1-62



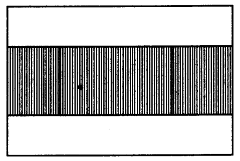
REC/PB 0.9 Vp-p
20 mV/0.5 msec/DIV

WF12 IC1-80



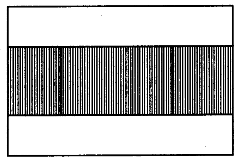
REC 0.2 Vp-p
5 mV/0.5 msec/DIV

WF13 IC1-97



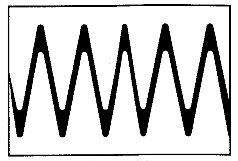
REC 1.1 Vp-p
0.1 V/5 msec/DIV

WF14 IC1-105



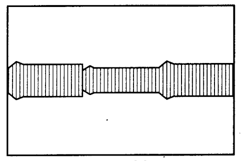
REC 1.8 Vp-p
0.1 V/1 msec/DIV

WF15 IC1-119



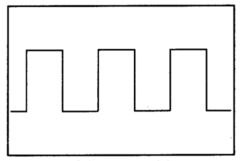
REC 0.7 Vp-p
20 mV/0.5 msec/DIV

WF16 TP2253 A.FM



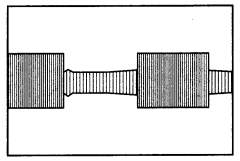
PB 0.5 Vp-p
50 mV/5 msec/DIV

WF17 TP111 D.FF



REC/PB 3.4 Vp-p
0.1 V/10 msec/DIV

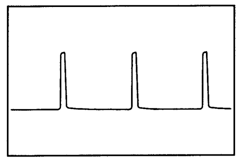
WF18 TP106 PB.FM



PB 0.5 Vp-p
20 mV/5 msec/DIV

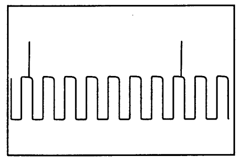
— SYSCON —

WF1 CN3001-4 D.PG



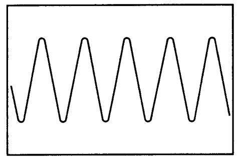
REC/PB 4.5 Vp-p
0.1 V/10 msec/DIV

WF2 CN3001-5 D.FG



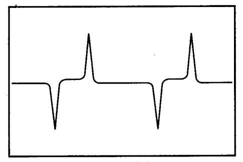
REC/PB 4.5 Vp-p
0.1 V/10 msec/DIV

WF3 CN3003-2 CAP_FG



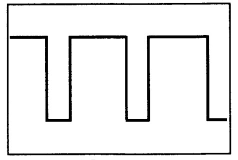
REC/PB 2.2 Vp-p
50 mV/0.5 msec/DIV

WF4 TP4001 CTL.P



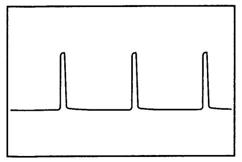
PB 2.2 Vp-p
0.1 V/10 msec/DIV

WF5 IC3001-1 CTL(+)



REC 3.5 Vp-p
0.1 V/10 msec/DIV

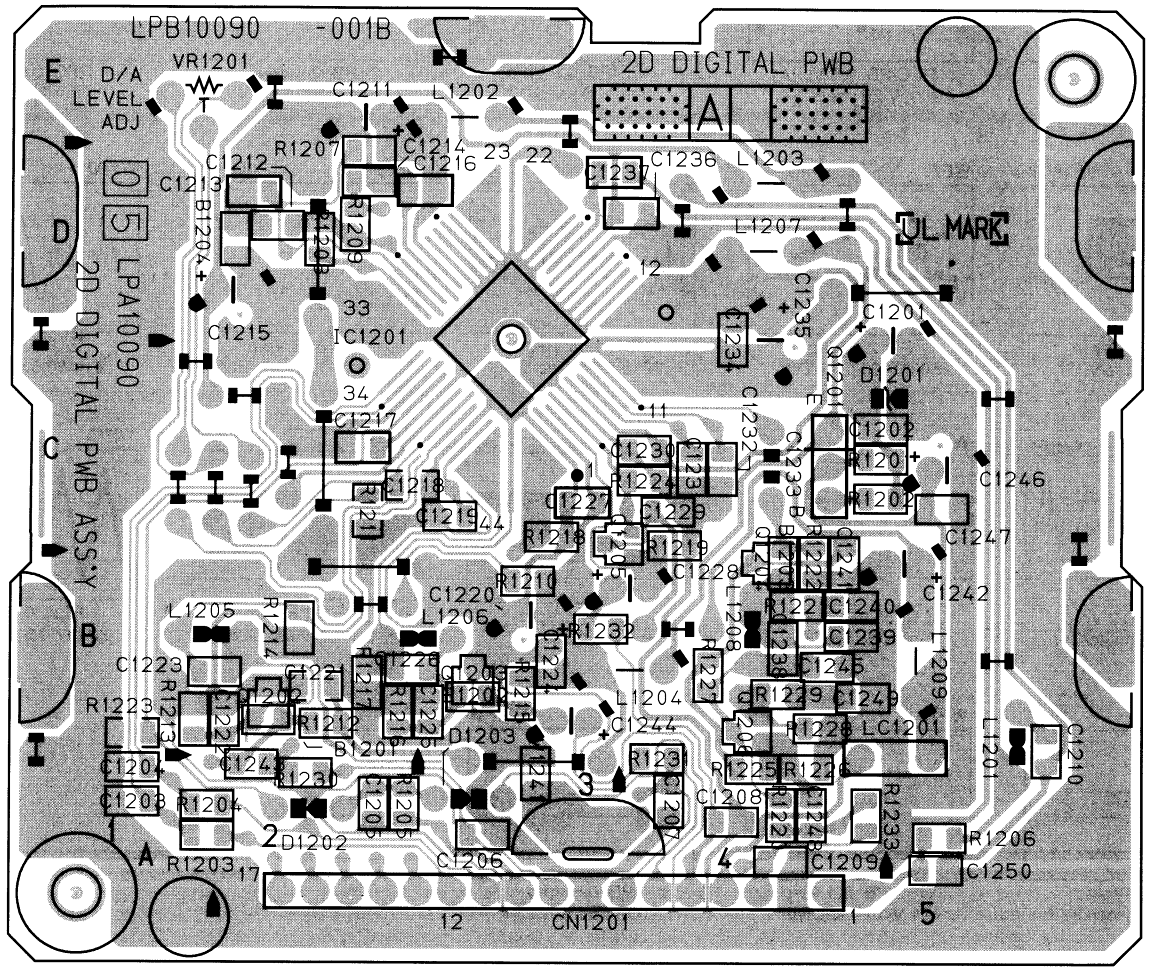
WF6 IC3001-98 C.SYNC



REC/PB 4.2 Vp-p
0.1 V/20 µsec/DIV

4.15 2D DIGITAL CIRCUIT BOARD [HR-S6700EK/EU]

<05> 2D DIGITAL
LPB10090-001B

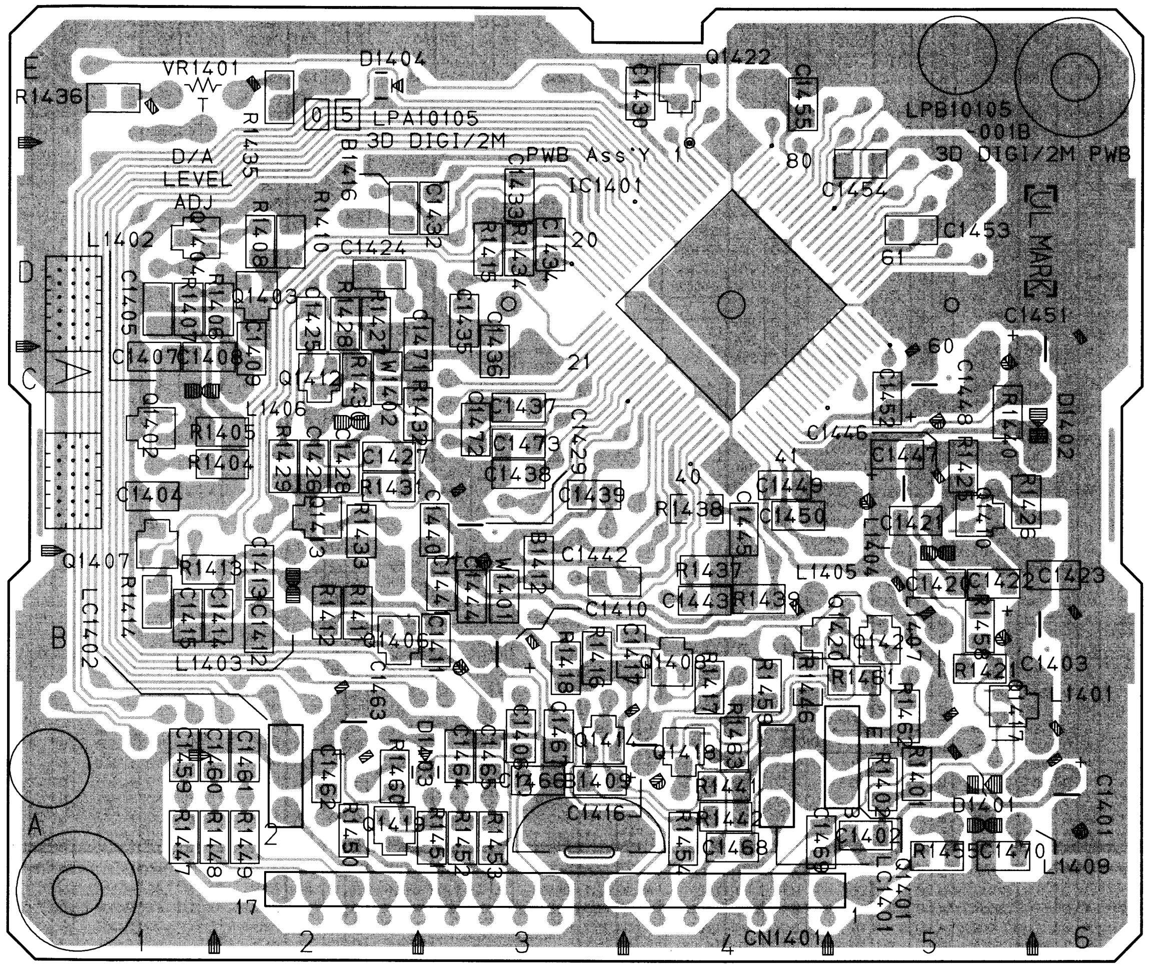


COMPONENT PARTS LOCATION GUIDE <2D DIGITAL>

REF.NO.	LOCATION		
CAPACITOR			
C1201	A	D	5D
C1202	B	C	5C
C1203	B	C	1A
C1204	B	C	1A
C1205	B	C	2A
C1206	B	C	3A
C1207	B	C	4A
C1208	B	C	4A
C1209	B	C	4A
C1210	B	C	6B
C1211	A	D	2E
C1212	B	C	2D
C1213	B	C	2D
C1214	B	C	2D
C1215	A	D	2D
C1216	B	C	3D
C1217	B	C	2C
C1218	B	C	2C
C1219	B	C	3C
C1220	A	D	3B
C1221	B	C	2B
C1222	B	C	2B
C1223	B	C	2B
C1224	B	C	3B
C1225	B	C	3B
C1226	B	C	2B
C1227	B	C	3C
C1228	A	D	3B
C1229	B	C	4C
C1230	B	C	4C
C1231	B	C	4C
C1232	B	C	4C
C1233	A	D	4C
C1234	B	C	4D
C1235	A	D	4D
C1236	B	C	4D
C1237	B	C	3D
C1238	B	C	4B
C1239	B	C	5B
C1240	B	C	5B
C1241	B	C	5B
C1242	A	D	5B
C1243	B	C	2A
C1244	A	D	3B
C1245	B	C	5B
C1246	A	D	5C
C1247	B	C	5C
C1248	B	C	4A
C1249	B	C	5B
C1250	B	C	5A
CONNECTOR			
CN1201	A	D	5A
DIODE			
D1201	A	D	5C
D1202	A	D	2A
D1203	A	D	3A
IC			
IC1201	B	C	3D
COIL			
L1201	A	D	5A
L1202	A	D	3E
L1203	A	D	4D
L1204	A	D	4B
L1205	A	D	2B
L1206	A	D	3B
L1207	A	D	4D
L1208	A	D	4B
L1209	A	D	5B
TRANSISTOR			
Q1201	A	D	5C
Q1202	B	C	2B
Q1203	B	C	3B
Q1204	B	C	4B
Q1205	B	C	3C
Q1206	B	C	4B
RESISTOR			
R1201	B	C	5C
R1202	B	C	5C
R1203	B	C	1A
R1204	B	C	1A
R1205	B	C	2A
R1206	B	C	5A
R1207	B	C	2D
R1208	B	C	2D
R1209	B	C	2D
R1210	B	C	3B
R1211	B	C	2C
R1212	B	C	2B
R1213	B	C	1B
R1214	B	C	2B
R1215	B	C	3B
R1216	B	C	2B
R1217	B	C	2B
R1218	B	C	3C
R1219	B	C	4C
R1220	B	C	4A
R1221	B	C	4B
R1222	B	C	4B
R1223	B	C	1B
R1224	B	C	4C
R1225	B	C	4A
R1226	B	C	4A
R1227	B	C	4B
R1228	B	C	4B
R1229	B	C	4B
R1230	B	C	2A
R1231	B	C	4B
R1232	B	C	3B
R1233	B	C	5A
VR1201	A	D	1E
OTHER			
LC1201	A	D	5B

4.16 3D DIGITAL/2M CIRCUIT BOARD [HR-S7700EK/EU]

<05> 3D DIGITAL/2M
LPB10105-001B

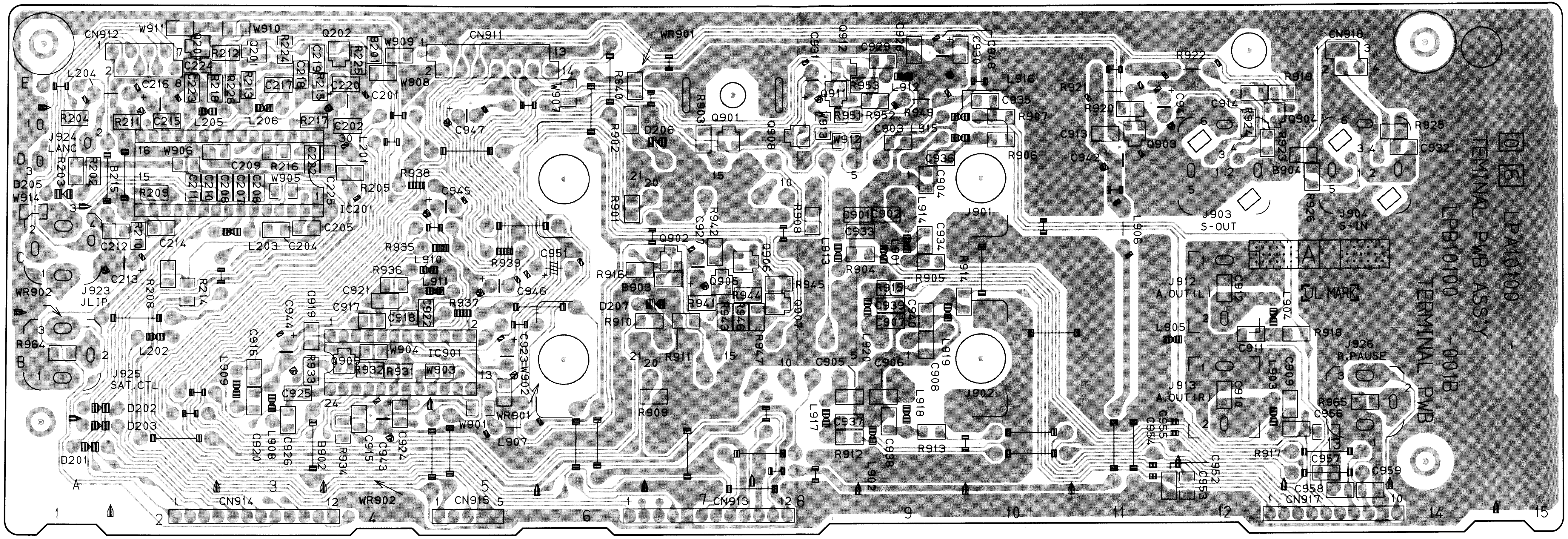


COMPONENT PARTS LOCATION GUIDE <3D DIGITAL/2M>

REF.NO.	LOCATION		
CAPACITOR			
C1401	A	D	6A
C1402	B	C	5A
C1403	A	D	5B
C1404	B	C	1C
C1405	B	C	1D
C1406	B	C	3B
C1407	B	C	1C
C1408	B	C	1C
C1409	B	C	2C
C1410	A	D	3B
C1411	B	C	3B
C1412	B	C	2B
C1413	B	C	2B
C1414	B	C	2B
C1415	B	C	1B
C1416	A	D	4A
C1417	B	C	4B
C1420	B	C	5B
C1421	B	C	5C
C1422	B	C	5B
C1423	B	C	6B
C1424	B	C	2D
C1425	B	C	2D
C1426	B	C	2C
C1427	B	C	2C
C1428	B	C	2C
C1429	A	D	3C
C1430	B	C	4E
C1432	B	C	3D
C1433	B	C	3D
C1434	B	C	3D
C1435	B	C	3D
C1436	B	C	3C
C1437	B	C	3C
C1438	B	C	3C
C1439	B	C	3C
C1440	B	C	3C
C1441	B	C	3B
C1442	B	C	3B
C1443	B	C	4B
C1444	B	C	3B
C1445	B	C	4C
C1446	A	D	5C
C1447	B	C	5C
C1448	A	D	5C
C1449	B	C	4C
C1450	B	C	4C
C1451	A	D	5D
C1452	B	C	5C
C1453	B	C	5D
C1454	B	C	5D
C1455	B	C	4E
C1459	B	C	1B
C1460	B	C	2B
C1461	B	C	2B
C1462	B	C	2A
C1463	A	D	2B
C1464	B	C	3B
C1465	B	C	3B
C1466	B	C	3A
C1467	B	C	3B
C1468	B	C	4A
C1469	B	C	4A
C1470	B	C	5A
C1471	B	C	2D
C1472	B	C	3C
C1473	B	C	3C
CONNECTOR			
CN1401	A	D	5A
DIODE			
D1401	A	D	5A
D1402	A	D	6C
D1403	B	C	3B
D1404	B	C	2E
IC			
IC1401	B	C	4D
COIL			
L1401	A	D	5B
L1402	A	D	2C
L1403	A	D	2B
L1404	A	D	5C
L1405	A	D	4B
L1406	A	D	2C
L1407	A	D	5B
L1409	A	D	5A
TRANSISTOR			
Q1401	A	D	5B
Q1402	B	C	1C
Q1403	B	C	2D
Q1404	B	C	1D
Q1406	B	C	2B
Q1407	B	C	1C
Q1408	B	C	4B
Q1410	B	C	5C
Q1412	B	C	2C
Q1413	B	C	2C
Q1414	B	C	3B
Q1417	B	C	5B
Q1418	B	C	4B
Q1419	B	C	2A
Q1420	B	C	4B
Q1421	B	C	5B
Q1422	B	C	4E
RESISTOR			
R1401	B	C	5A
R1402	B	C	5A
R1404	B	C	2C
R1405	B	C	2C
R1406	B	C	2D
R1407	B	C	1D
R1408	B	C	2D
R1410	B	C	2D
R1411	B	C	2B
R1412	B	C	2B
R1413	B	C	1B
R1414	B	C	1B
R1415	B	C	3D
R1416	B	C	3B
R1417	B	C	4B
R1418	B	C	3B
R1421	B	C	5B
R1425	B	C	5C
R1426	B	C	5C
R1427	B	C	2D
R1428	B	C	2D
R1429	B	C	2C
R1430	B	C	2C
R1431	B	C	2C
R1432	B	C	2C
R1433	B	C	2C
R1434	B	C	3D
R1435	B	C	2E
R1436	B	C	1E
R1437	B	C	4B
R1438	B	C	4C
R1439	B	C	4B
R1440	B	C	5C
R1441	B	C	4A
R1442	B	C	4A
R1446	B	C	4B
R1447	B	C	1A
R1448	B	C	2A
R1449	B	C	2A
R1450	B	C	2A
R1451	B	C	3A
R1452	B	C	3A
R1453	B	C	3A
R1454	B	C	4A
R1455	B	C	5A
R1458	B	C	5B
R1459	B	C	4B
R1460	B	C	2A
R1461	B	C	5B
R1462	B	C	5B
R1463	B	C	4B
VR1401	A	D	1E
OTHER			
LC1401	A	D	4A
LC1402	A	D	2A

4.17 TERMINAL CIRCUIT BOARD

<06> TERMINAL
LPB10100-001B

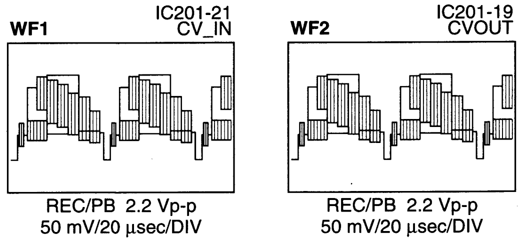


COMPONENT PARTS LOCATION GUIDE<TERMINAL>

REF.NO.	LOCATION		
CAPACITOR			
C201	A	D	4E
C202	B	C	4D
C204	B	C	3C
C205	B	C	3C
C206	B	C	3D
C207	B	C	3D
C208	B	C	3D
C209	B	C	2D
C210	B	C	2D
C211	B	C	2D
C212	B	C	2C
C213	A	D	2C
C214	B	C	2C
C215	B	C	2D
C216	A	D	2E
C217	B	C	3E
C218	B	C	3E
C219	B	C	3E
C220	B	C	4E
C222	B	C	3D
C223	B	C	2E
C224	B	C	2E
C225	B	C	4D
C901	B	C	8D
C902	B	C	9D
C903	B	C	9D
C904	B	C	9D
C905	B	C	8B
C906	B	C	9B
C907	B	C	9C
C908	B	C	9B
C909	B	C	13B
C910	B	C	12B
C911	B	C	12B
C912	B	C	12C
C913	B	C	11D
C914	B	C	12E
C915	B	C	4B
C916	B	C	3B
C917	B	C	4C
C918	B	C	4C
C919	B	C	3B
C920	B	C	3B
C921	B	C	4C
C922	B	C	4C
C923	A	D	5B
C924	B	C	4B
C925	B	C	3B
C926	B	C	3B
C927	A	D	7C
C928	B	C	9E
C929	B	C	9E
C930	B	C	9E
C931	A	D	8E
C932	B	C	14D
C933	B	C	9C
C934	B	C	9C
C935	B	C	10E
C936	B	C	9D
C937	B	C	8B
C938	B	C	9B
C939	B	C	9C
C940	B	C	9C
C941	A	D	11E
C942	A	D	11D
C943	A	D	4B
C944	A	D	3B
C945	A	D	5D
C946	A	D	5C
C947	A	D	5D
C948	A	D	9E
C951	A	D	5C
C952	B	C	11A
C953	B	C	12A
C954	A	D	11A
C955	A	D	11A
C956	B	C	13A
C957	B	C	13A
C958	B	C	13A
C959	B	C	13A
CONNECTOR			
CN911	A	D	5E
CN912	A	D	2E
CN913	A	D	6A
CN914	A	D	2A
CN915	A	D	5A
CN917	A	D	12A
CN918	A	D	13E
DIODE			
D201	A	D	1A
D202	A	D	1B
D203	A	D	1B
D205	A	D	1D
D206	A	D	7D
D207	A	D	7C
IC			
IC201	A	D	3D
IC901	A	D	4B
JACK			
J901	A	D	8D
J902	A	D	8B
J903	A	D	12D
J904	A	D	13D
J912	A	D	12C
J913	A	D	12B
J923	A	D	1C
J924	A	D	1D
J925	A	D	1B
J926	A	D	13B
COIL			
L201	A	D	4D
L202	A	D	2B
L203	A	D	3C
L204	A	D	2E
L205	A	D	3E
L206	A	D	3E
L901	A	D	9C
L902	A	D	9B
L903	A	D	12A
L904	A	D	12B
L905	A	D	12B
L906	A	D	11C
L907	A	D	5B
L908	A	D	3B
L909	A	D	3B
L910	A	D	4C
L911	A	D	5C
L912	A	D	9E
L913	A	D	8C
L914	A	D	9C
L915	A	D	10D
L916	A	D	10D
L917	A	D	8A
L918	A	D	9A
L919	A	D	9B
L920	A	D	9B
TRANSISTOR			
Q201	B	C	3E
Q202	B	C	4E
Q207	B	C	2E
Q901	B	C	7D
Q902	B	C	7C
Q903	B	C	11D
Q904	B	C	12D
Q905	B	C	7C
Q906	B	C	7C
Q907	B	C	8C
Q908	B	C	8D
Q909	B	C	4B
Q911	B	C	8E
Q912	B	C	8E
RESISTOR			
R202	B	C	1D
R203	B	C	1D
R204	B	C	1D
R205	B	C	4D
R208	B	C	2C
R209	B	C	2D
R210	B	C	2C
R211	B	C	2D
R212	B	C	3E
R213	B	C	3E
R214	B	C	2C
R215	B	C	3E
R216	B	C	3D
R217	B	C	3D
R218	B	C	2E
R224	B	C	3E
R225	B	C	4E
R226	B	C	3E
R901	B	C	6D
R902	B	C	6D
R903	B	C	7D
R904	B	C	9C
R905	B	C	9C
R906	B	C	10D
R907	B	C	10D
R908	B	C	8C
R909	B	C	7B
R910	B	C	7C
R911	B	C	7C
R912	B	C	8A
R913	B	C	9A
R914	B	C	9C
R915	B	C	9C
R916	B	C	6C
R917	B	C	13A
R918	B	C	13B
R919	B	C	12E
R920	B	C	11E
R921	A	D	11E
R922	A	D	11E
R923	B	C	12D
R924	B	C	12D
R925	B	C	14D
R926	B	C	13D
R931	B	C	4B
R932	B	C	4B
R933	B	C	3B
R934	B	C	4B
R935	A	D	5C
R936	B	C	4C
R937	A	D	5C
R938	A	D	4D
R939	A	D	5C
R940	B	C	6E
R941	B	C	7C
R942	B	C	7C
R943	B	C	7C
R944	B	C	7C
R945	B	C	8C
R946	B	C	7C
R947	B	C	8C
R949	A	D	9E
R951	B	C	8D
R952	B	C	9E
R953	B	C	9E
R964	B	C	1B
R965	B	C	13B
OTHER			
WR901	A	D	5B
WR902	A	D	4A

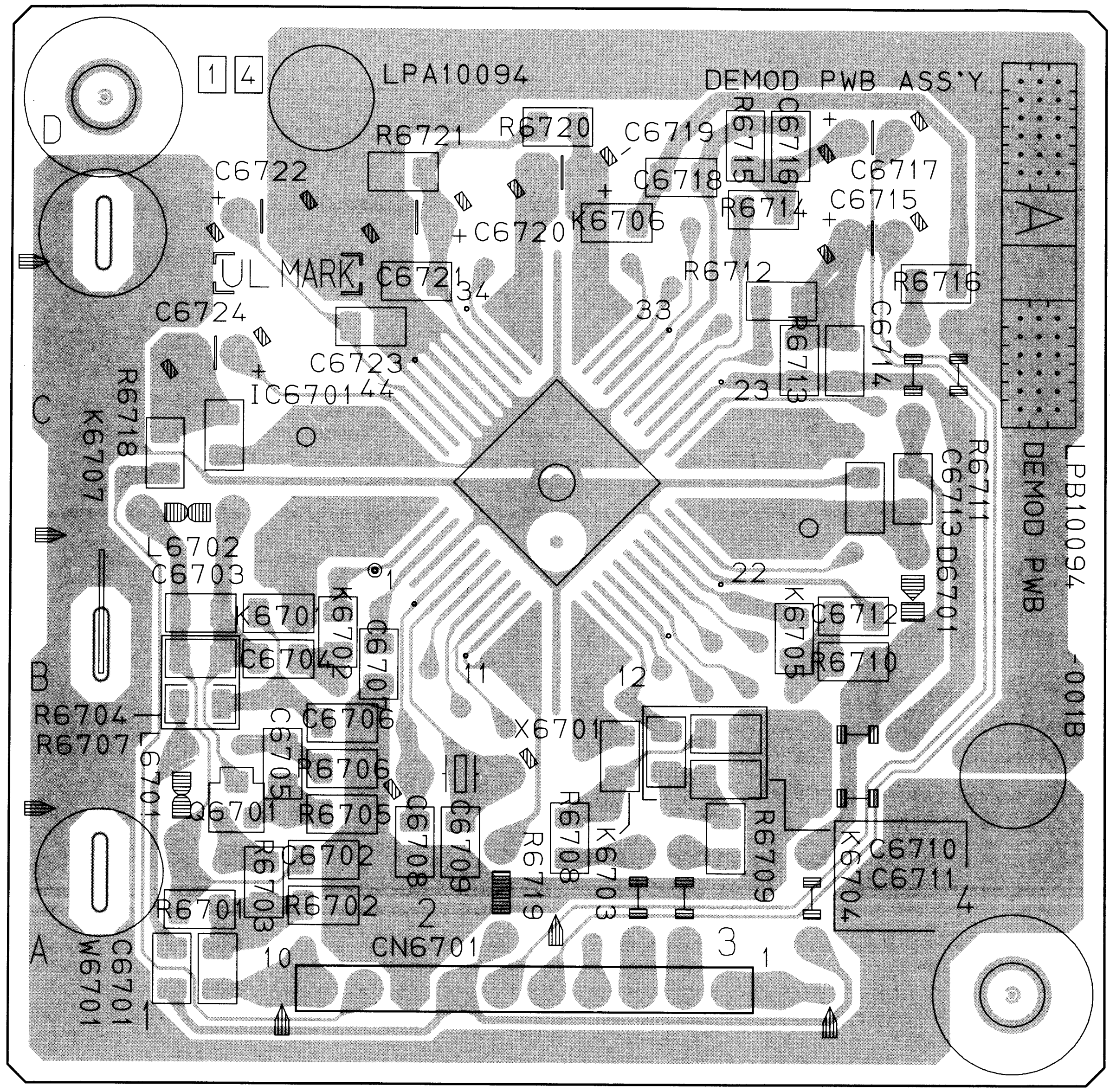
WAVEFORMS

— TERMINAL —



4.18 DEMODULATOR CIRCUIT BOARD

<14> DEMODULATOR
LPB10094-001B

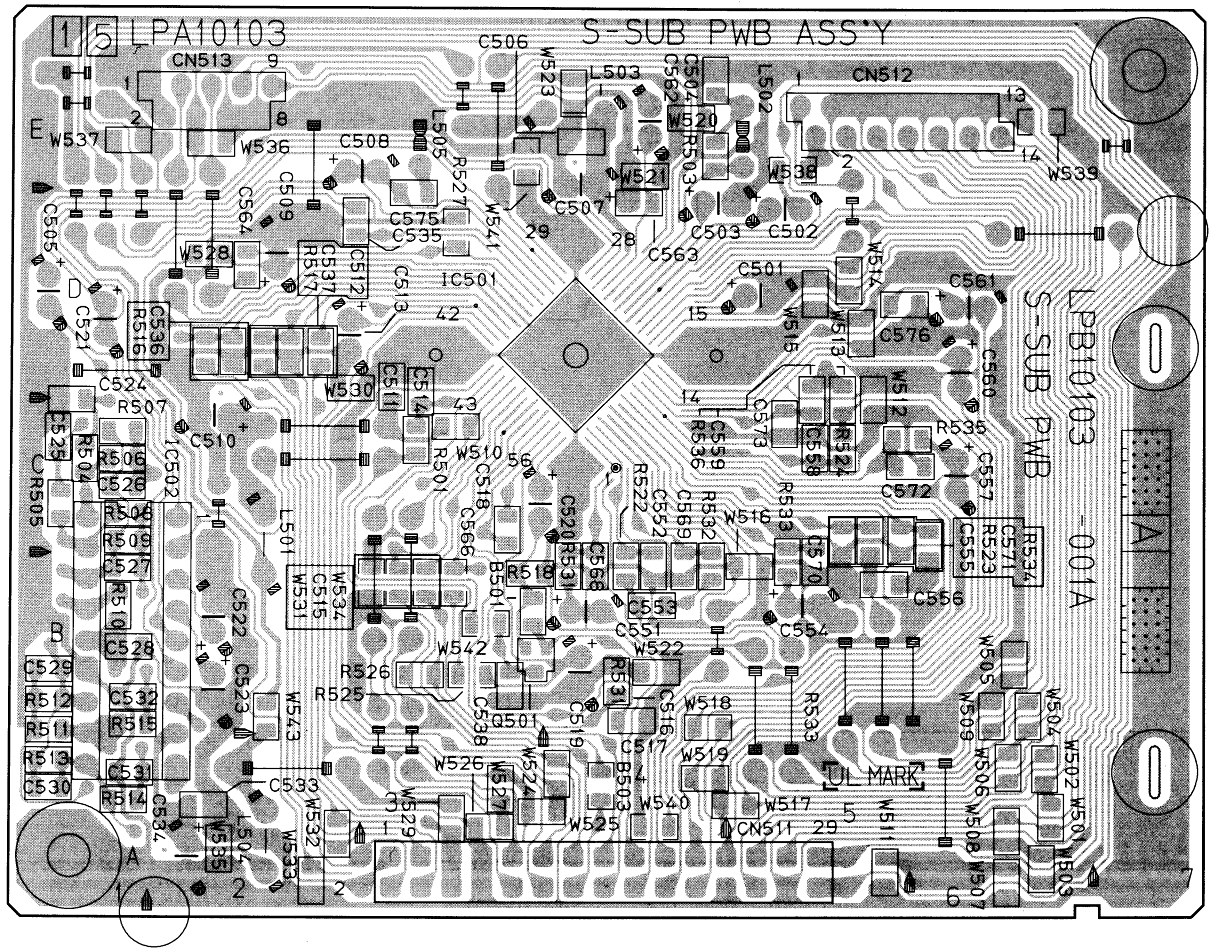

LPA10094
DEMOD PWB ASS'Y
1
4
D
C
B
A
R6721
R6720
C6719
R6715
C6716
C6717
C6715
C6718
R6714
K6706
C6720
C6722
UL MARK
C6721
34
33
R6712
R6716
C6714
R6713
23
C6724
C6723
44
IC6701
R6718
K6707
L6702
C6703
K6701
K6702
C6707
C6704
R6704
R6707
C6706
C6705
R6706
Q6701
R6705
C6708
C6709
L6701
C6702
R6703
R6701
R6702
C6701
W6701
10
2
CN6701
3
1
R6719
R6708
K6703
X6701
R6709
K6704
C6710
C6711
4
11
12
22
K6705
C6712
R6710
R6711
C6713
D6701
LPB10094
DEMOD PWB
-001B
A

COMPONENT PARTS LOCATION GUIDE <DEMODULATOR>

REF.NO.	LOCATION		
CAPACITOR			
C6701	B	C	1A
C6702	B	C	2A
C6703	B	C	1B
C6704	B	C	1B
C6705	B	C	2B
C6706	B	C	2B
C6707	B	C	2B
C6708	B	C	2A
C6709	B	C	2A
C6710	B	C	3B
C6711	B	C	3B
C6712	B	C	4B
C6713	B	C	4C
C6714	B	C	4C
C6715	A	D	4D
C6716	B	C	3D
C6717	A	D	4D
C6718	B	C	3D
C6719	A	D	3D
C6720	A	D	2D
C6721	B	C	2C
C6722	A	D	1D
C6723	B	C	2C
C6724	A	D	1C
CONNECTOR			
CN6701	A	D	3A
DIODE			
D6701	A	D	4B
IC			
IC6701	B	C	3C
COIL			
L6701	A	D	1A
L6702	A	D	1C
TRANSISTOR			
Q6701	B	C	1B
RESISTOR			
R6701	B	C	1A
R6702	B	C	2A
R6703	B	C	1A
R6704	B	C	1B
R6705	B	C	2A
R6706	B	C	2B
R6707	B	C	1B
R6708	B	C	3A
R6709	B	C	3A
R6710	B	C	4B
R6711	B	C	4C
R6712	B	C	3C
R6713	B	C	3C
R6714	B	C	3D
R6715	B	C	3D
R6716	B	C	4C
R6718	B	C	1C
R6719	A	D	2A
R6720	B	C	3D
R6721	B	C	2D
OTHER			
K6701	B	C	1B
K6702	B	C	2B
K6703	B	C	3B
K6704	B	C	3B
K6705	B	C	3B
K6706	B	C	3D
K6707	B	C	1C
X6701	A	D	2B

4.19 S-SUB CIRCUIT BOARD

<15> S-SUB
LPB10103-001A



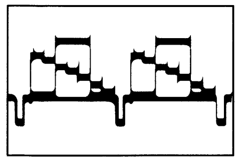
COMPONENT PARTS LOCATION GUIDE<S-SUB>

REF.NO.	LOCATION			REF.NO.	LOCATION			REF.NO.	LOCATION			REF.NO.	LOCATION			REF.NO.	LOCATION		
CAPACITOR				C527	B	C	1B	C568	B	C	4B	R503	B	C	4E	R536	B	C	5C
C501	A	D	5D	C528	B	C	1B	C569	B	C	4B	R504	B	C	1C				
C502	A	D	5D	C529	B	C	1B	C570	B	C	5B	R505	B	C	1C				
C503	A	D	4D	C530	B	C	1A	C571	B	C	5C	R506	B	C	1C				
C504	B	C	4E	C531	B	C	1A	C572	B	C	6C	R507	B	C	1C				
C505	A	D	1D	C532	B	C	1B	C573	B	C	5C	R508	B	C	1C				
C506	B	C	4E	C533	B	C	2A	C575	B	C	3D	R509	B	C	1C				
C507	A	D	4E	C534	A	D	2A	C576	B	C	5D	R510	B	C	1B				
C508	A	D	2E	C535	B	C	2D	**CONNECTOR**				R511	B	C	1B				
C509	A	D	2D	C536	B	C	2D	CN511	A	D	3A	R512	B	C	1B				
C510	A	D	2C	C537	B	C	2D	CN512	A	D	5E	R513	B	C	1A				
C511	B	C	3C	C538	B	C	3B	CN513	A	D	1E	R514	B	C	1A				
C512	B	C	2D	C551	A	D	4B	**IC**				R515	B	C	1B				
C513	A	D	2D	C552	B	C	4B	IC501	B	C	4D	R516	B	C	2D				
C514	B	C	3C	C553	B	C	4B	IC502	A	D	1C	R517	B	C	2D				
C515	B	C	3B	C554	A	D	5B	**COIL**				R518	B	C	3B				
C516	B	C	4B	C555	B	C	5C	L501	A	D	2B	R522	B	C	4B				
C517	B	C	4B	C556	B	C	5B	L502	A	D	5E	R523	B	C	5C				
C518	B	C	3C	C557	A	D	6C	L503	A	D	3E	R524	B	C	5C				
C519	A	D	4B	C558	B	C	5C	L504	A	D	2A	R525	B	C	3B				
C520	A	D	3C	C559	B	C	5C	L505	A	D	3E	R526	B	C	3B				
C521	A	D	1D	C560	A	D	6D	**TRANSISTOR**				R527	B	C	3D				
C522	A	D	2B	C561	A	D	6D	Q501	B	C	3B	R531	B	C	4B				
C523	A	D	2B	C562	A	D	4E	**RESISTOR**				R532	B	C	4B				
C524	B	C	1C	C563	B	C	4D	R501	B	C	3C	R533	B	C	5B				
C525	B	C	1C	C564	B	C	2D					R534	B	C	6C				
C526	B	C	1C	C566	B	C	3B					R535	B	C	5C				

WAVEFORMS

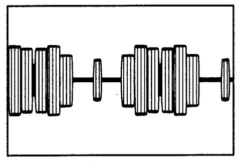
— S-SUB —

WF1 IC501-9



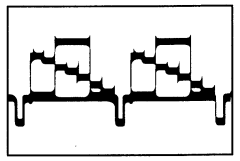
REC 1.0 Vp-p
20 mV/20 μsec/DIV

WF2 IC501-11



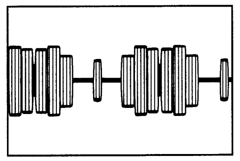
REC 0.7 Vp-p
20 mV/20 μsec/DIV

WF3 IC501-15



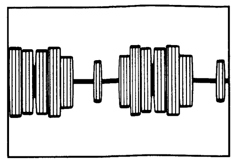
REC/PB 2.2 Vp-p
50 mV/20 μsec/DIV

WF4-1 IC501-17



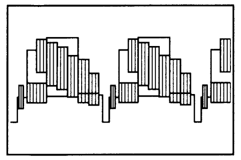
REC 1.2 Vp-p
50 mV/20 μsec/DIV

WF4-2 IC501-17



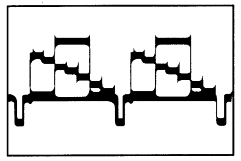
PB 1.3 Vp-p
50 mV/20 μsec/DIV

WF5 IC501-19



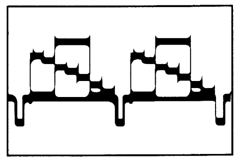
REC/PB 2.2 Vp-p
50 mV/20 μsec/DIV

WF6 IC501-29



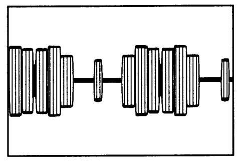
REC/PB 0.52 Vp-p
20 mV/20 μsec/DIV

WF7 IC501-31



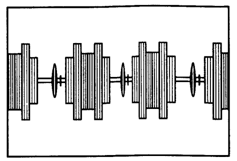
PB 0.5 Vp-p
20 mV/20 μsec/DIV

WF8 IC501-33



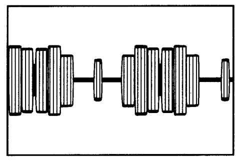
REC 0.6 Vp-p
20 mV/20 μsec/DIV

WF9-1 IC501-42



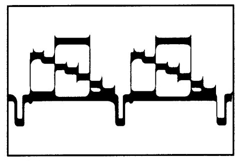
REC 0.48 Vp-p
20 mV/20 μsec/DIV

WF9-2 IC501-42



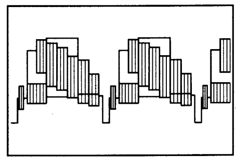
PB 0.7 Vp-p
20 mV/20 μsec/DIV

WF10 IC501-43



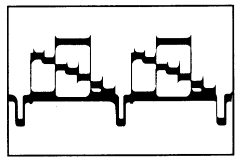
REC/PB 0.76 Vp-p
20 mV/20 μsec/DIV

WF11-1 IC501-45



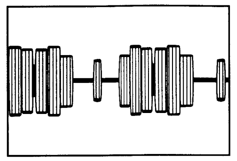
REC 1.7 Vp-p
50 mV/20 μsec/DIV

WF11-2 IC501-45



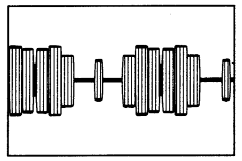
REC/PB 1.7 Vp-p
50 mV/20 μsec/DIV

WF12 IC501-47



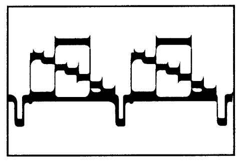
PB 1.3 Vp-p
50 mV/20 μsec/DIV

WF13 IC501-48



PB 0.6 Vp-p
20 mV/20 μsec/DIV

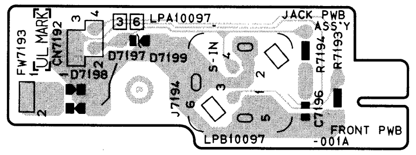
WF14 IC501-56



PB 2.2 Vp-p
50 mV/20 μsec/DIV

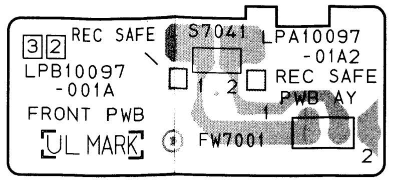
4.20 SWITCH DISPLAY, REC SAFETY, JACK AND SHUTTLE/PLAY CIRCUIT BOARDS [HR-S6700EK/EU]

<36> JACK
LPB10097-001A



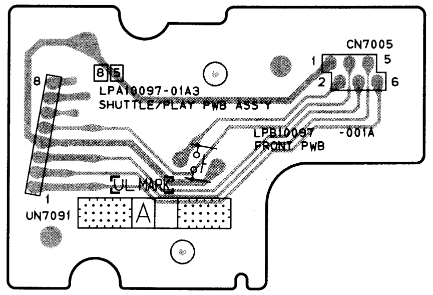
LPA10097
JACK PWB ASS'Y
FW7193
CN7192
UL MARK
D7197
D7199
D7198
J7194
S-IN
C7196
R7194
R7193
FRONT PWB
LPB10097
-001A

<32> REC SAFETY
LPB10097-001A



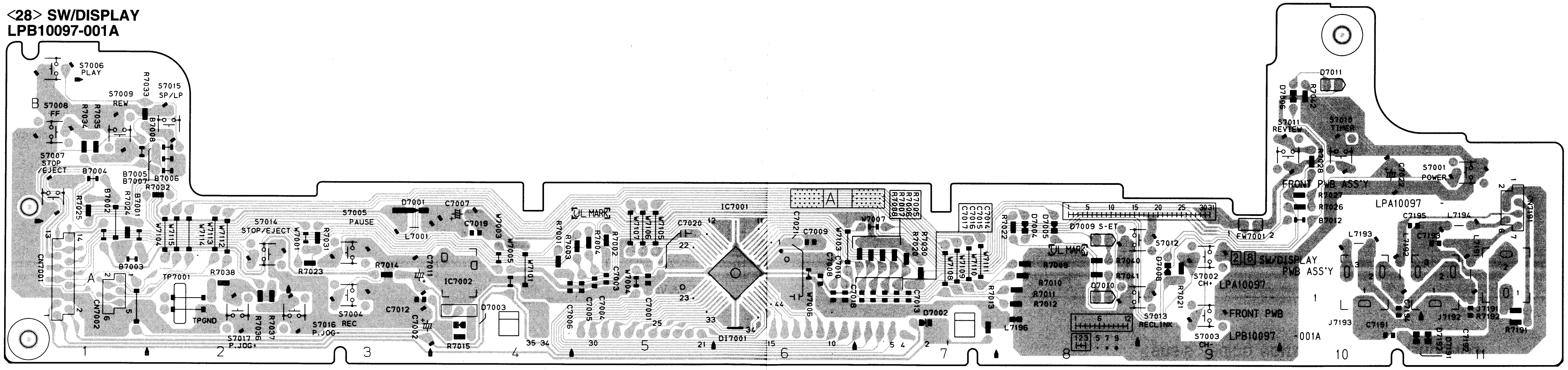
REC SAFE
S7041
LPA10097
-01A2
REC SAFE
PWB AY
LPB10097
-001A
FRONT PWB
UL MARK
FW7001

<85> SHUTTLE/PLAY
LPB10097-001A



CN7005
LPA10097-01A3
SHUTTLE/PLAY PWB ASS'Y
LPB10097
-001A
FRONT PWB
UL MARK
UN7091
A

<28> SW/DISPLAY
LPB10097-001A



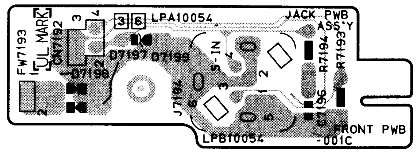
S7006 PLAY
S7015 SP/LP
S7009 REW
S7008 FF
S7007 STOP /EJECT
S7014 STOP/EJECT
S7005 PAUSE
S7004
S7016 REC
S7017 P.JOG
IC7001
IC7002
CN7001
CN7002
TP7001
TPGND
D7001
D7002
D7003
DI7001
L7001
L7196
S7012
S7002 CH+
S7013 RECLINK
S7003 CH-
SW/DISPLAY PWB ASS'Y
LPA10097
FRONT PWB
LPB10097
-001A
S7001 POWER
S7011 REVIEW
S7010 TIMER
D7011
D7006
L7193
L7194
J7191
J7192
J7193
C7191
C7195
CN7191
R7191
R7192
UL MARK
1
2
3
4
5
6
7
8
9
10
11
A
B

COMPONENT PARTS LOCATION GUIDE<SW/DISPLAY>

REF.NO.	LOCATION		
CAPACITOR			
C7001	A	D	5A
C7002	A	D	3A
C7003	A	D	5A
C7004	A	D	5A
C7005	A	D	5A
C7006	A	D	4A
C7007	A	D	4B
C7008	A	D	6A
C7009	A	D	6A
C7010	A	D	6A
C7011	A	D	3A
C7012	A	D	3A
C7013	A	D	7A
C7014	A	D	7A
C7015	A	D	7A
C7016	A	D	7A
C7017	A	D	7A
C7018	A	D	6A
C7019	A	D	4A
C7020	A	D	5A
C7021	A	D	6A
C7022	A	D	10B
C7191	A	D	10A
C7192	A	D	11A
C7193	A	D	11A
C7194	A	D	10A
C7195	A	D	11A
CONNECTOR			
CN7001	A	D	1A
CN7002	A	D	1A
CN7191	A	D	11B
DIODE			
D7001	A	D	3B
D7002	A	D	7A
D7003	A	D	4A
D7004	A	D	8B
D7005	A	D	8B
D7006	A	D	10B
D7008	A	D	9A
D7009	A	D	8A
D7010	A	D	8A
D7011	A	D	10B
D7191	A	D	10A
D7192	A	D	11A
IC			
IC7001	B	C	6A
IC7002	A	D	4A
JACK			
J7191	A	D	11A
J7192	A	D	11A
J7193	A	D	10A
COIL			
L7001	A	D	3A
L7191	A	D	11A
L7192	A	D	10A
L7193	A	D	10A
L7194	A	D	11A
L7196	A	D	8A
RESISTOR			
R7001	A	D	4A
R7002	A	D	5A
R7003	A	D	5A
R7004	A	D	5A
R7005	A	D	7A
R7006	A	D	7A
R7007	A	D	7A
R7008	A	D	7A
R7009	A	D	8A
R7010	A	D	8A
R7011	A	D	8A
R7012	A	D	8A
R7013	A	D	7A
R7014	A	D	3A
R7015	A	D	4A
R7020	A	D	7A
R7021	A	D	9A
R7022	A	D	8A
R7023	A	D	3A
R7024	A	D	1B
R7025	A	D	1B
R7026	A	D	10B
R7027	A	D	10B
R7028	A	D	10B
R7030	A	D	7A
R7031	A	D	3A
R7032	A	D	1B
R7033	A	D	1B
R7034	A	D	1B
R7035	A	D	1B
R7036	A	D	2A
R7037	A	D	2A
R7038	A	D	2A
R7040	A	D	8A
R7041	A	D	8A
R7042	A	D	10B
R7191	A	D	11A
R7192	A	D	11A
SWITCH			
S7001	A	D	11B
S7002	A	D	9A
S7003	A	D	9A
S7004	A	D	3A
S7005	A	D	3A
S7006	A	D	1C
S7007	A	D	1B
S7008	A	D	1B
S7009	A	D	1B
S7010	A	D	10B
S7011	A	D	10B
S7012	A	D	8A
S7013	A	D	8A
S7014	A	D	2A
S7015	A	D	2B
S7016	A	D	3A
S7017	A	D	2A
TEST POINT			
TP7001	A	D	2A
TPGND	A	D	2A
OTHER			
DI7001	A	D	6A

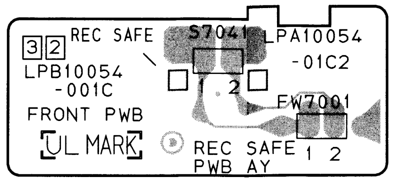
4.21 SWITCH/DISPLAY, REC SAFETY, JACK AND JOG CIRCUIT BOARDS [HR-S7700EK/EU]

<36> JACK
LPB10054-001C



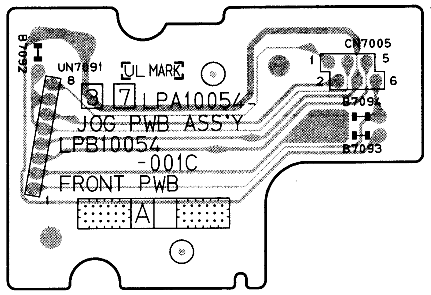
3 6 LPA10054
JACK PWB ASS'Y
FW7193
UL MARK
CN7192
D7198
D7197 D7199
J7194
R7194
R7193
C7196
FRONT PWB
LPB10054
-001C

<32> REC SAFETY
LPB10054-001C



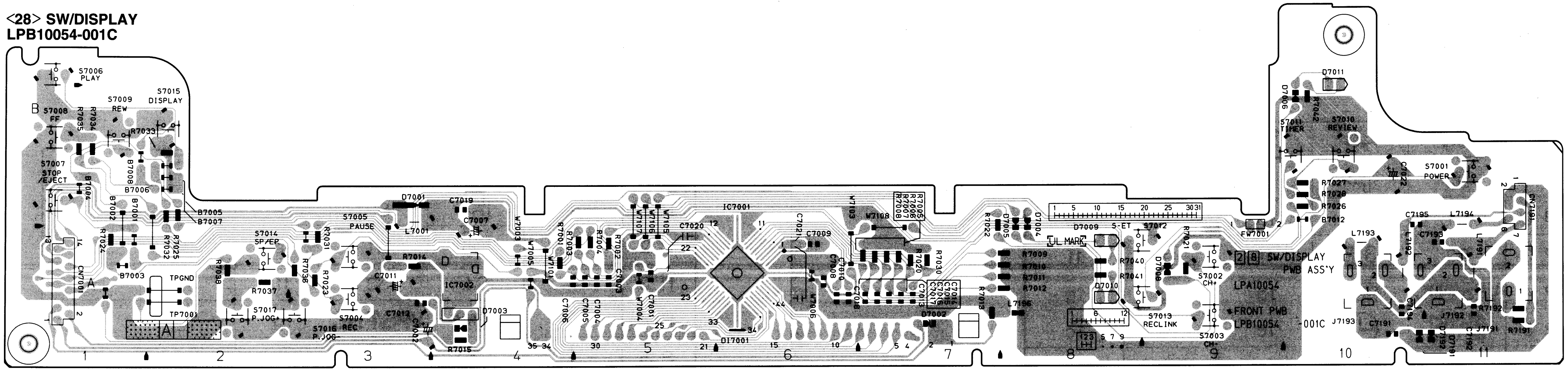
3 2 REC SAFE
S7041
LPA10054
-01C2
LPB10054
-001C
FRONT PWB
FW7001
UL MARK
REC SAFE 1 2
PWB AY

<37> JOG
LPB10054-001C



B7092
UN7091
UL MARK
CN7005
B7094
B7093
8 7 LPA10054
JOG PWB ASS'Y
LPB10054
-001C
FRONT PWB
A

<28> SW/DISPLAY
LPB10054-001C



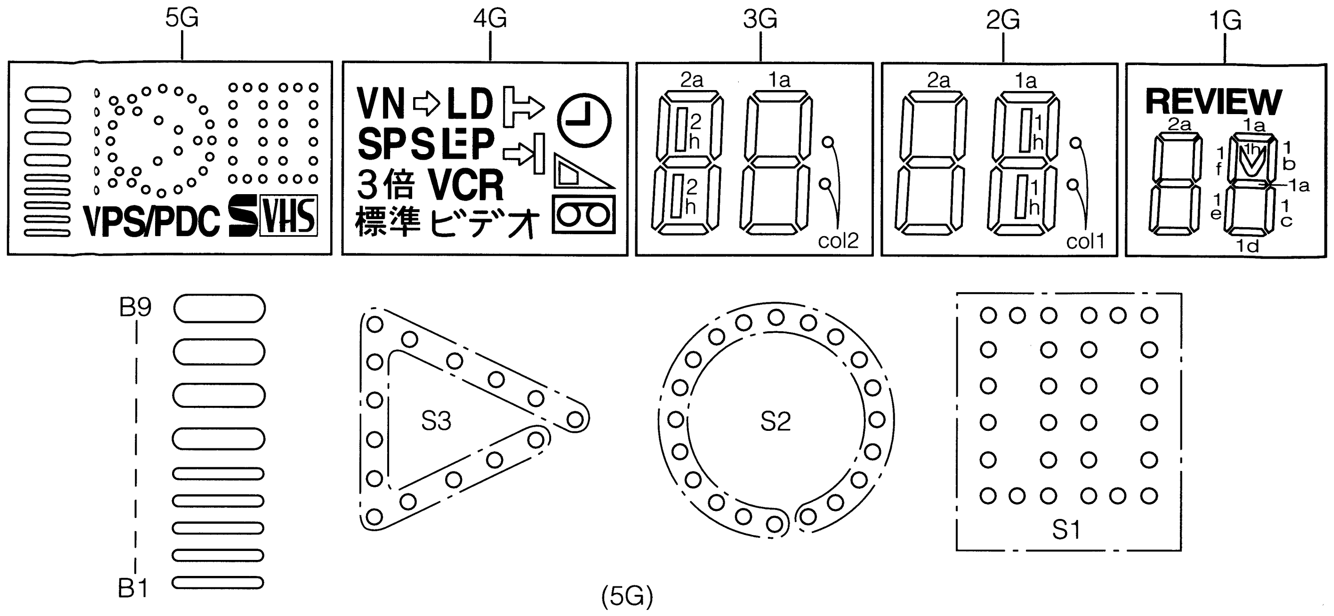
S7006 PLAY
S7015 DISPLAY
S7009 REW
S7008 FF
S7007 STOP /EJECT
S7005 PAUSE
S7014 SP/EP
S7017 P.JOG+
S7016 REC P.JOG-
S7004
S7001 POWER
S7011 TIMER
S7010 REVIEW
S7002 CH+
S7003 CH-
S7013 RECLINK
S7012
IC7001
IC7002
CN7001
CN7191
TPGND
TP7001
D17001
FW7001
2 8 SW/DISPLAY PWB ASS'Y
LPA10054
FRONT PWB
LPB10054
-001C
UL MARK
A
1
2
3
4
5
6
7
8
9
10
11

COMPONENT PARTS LOCATION GUIDE<SW/DISPLAY>

REF.NO.	LOCATION		
CAPACITOR			
C7001	A	D	5A
C7002	A	D	3A
C7003	A	D	5A
C7004	A	D	5A
C7005	A	D	5A
C7006	A	D	4A
C7007	A	D	4A
C7008	A	D	6A
C7009	A	D	6A
C7010	A	D	6A
C7011	A	D	3A
C7012	A	D	3A
C7013	A	D	7A
C7014	A	D	7A
C7015	A	D	7A
C7016	A	D	7A
C7017	A	D	7A
C7018	A	D	6A
C7019	A	D	4B
C7020	A	D	5A
C7021	A	D	6A
C7022	A	D	10B
C7191	A	D	10A
C7192	A	D	11A
C7193	A	D	11A
C7194	A	D	10A
C7195	A	D	11A
CONECTOR			
CN7001	A	D	1A
CN7191	A	D	11B
DIODE			
D7001	A	D	3B
D7002	A	D	7A
D7003	A	D	4A
D7004	A	D	8B
D7005	A	D	8B
D7006	A	D	10B
D7008	A	D	9A
D7009	A	D	8A
D7010	A	D	8A
D7011	A	D	10B
D7191	A	D	10A
D7192	A	D	11A
IC			
IC7001	B	C	6A
IC7002	A	D	4A
JACK			
J7191	A	D	11A
J7192	A	D	11A
J7193	A	D	10A
COIL			
L7001	A	D	9C
L7191	A	D	11A
L7192	A	D	10A
L7193	A	D	10A
L7194	A	D	11A
L7196	A	D	8A
RESISTOR			
R7001	A	D	4A
R7002	A	D	5A
R7003	A	D	5A
R7004	A	D	5A
R7005	A	D	7A
R7006	A	D	7A
R7007	A	D	7A
R7008	A	D	7A
R7009	A	D	7A
R7010	A	D	7A
R7011	A	D	7A
R7012	A	D	7A
R7013	A	D	7A
R7014	A	D	3A
R7015	A	D	4A
R7020	A	D	7A
R7021	A	D	9A
R7022	A	D	7A
R7023	A	D	3A
R7024	A	D	1A
R7025	A	D	2A
R7026	A	D	10B
R7027	A	D	10B
R7028	A	D	10B
R7030	A	D	7A
R7031	A	D	3B
R7032	A	D	2A
R7033	A	D	2B
R7034	A	D	1B
R7035	A	D	1B
R7036	A	D	3A
R7037	A	D	2A
R7038	A	D	2A
R7040	A	D	8A
R7041	A	D	8A
R7042	A	D	10B
R7191	A	D	11A
R7192	A	D	11A
SWITCH			
S7001	A	D	11B
S7002	A	D	9A
S7003	A	D	9A
S7004	A	D	3A
S7005	A	D	3A
S7006	A	D	1C
S7007	A	D	1B
S7008	A	D	1B
S7009	A	D	1B
S7010	A	D	10B
S7011	A	D	10B
S7012	A	D	8A
S7013	A	D	8A
S7014	A	D	2A
S7015	A	D	2B
S7016	A	D	3A
S7017	A	D	2A
OTHER			
DI7001	A	D	6A
FW7001	A	D	9B
TP7001	A	D	1A
TPGND	A	D	1A

4.22 FDP GRID ASSIGNMENT AND ANODE CONNECTION [HR-S6700EK/EU]

GRID ASSIGNMENT

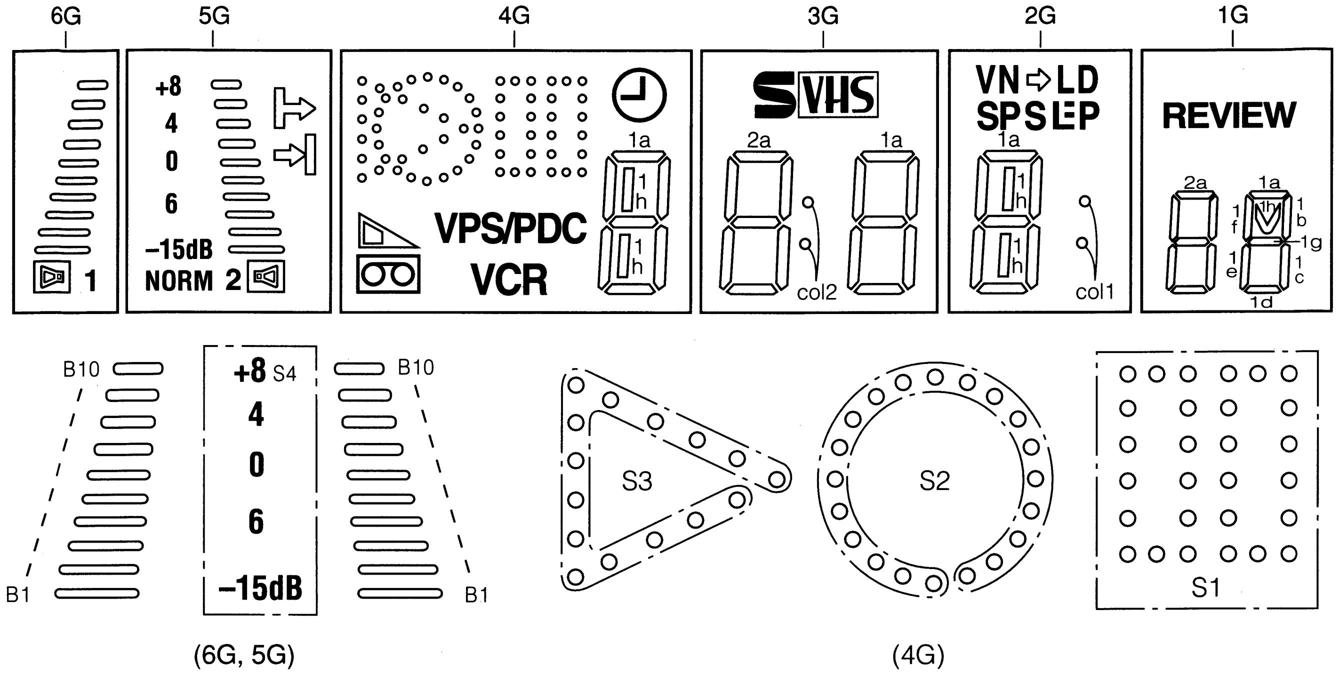

5G
4G
3G
2G
1G
VPS/PDC
SVHS
VN⇨LD
SP S L:P
3倍 VCR
標準 ビデオ
2a
1a
2h
1h
col2
col1
REVIEW
1b
1c
1d
1e
1f
1g
B9
B1
S3
S2
S1
(5G)

ANODE CONNECTION

	5G	4G	3G	2G	1G
P 1	S2	|⇨	1a	1a	1a
P 2	S1	⇨|	1b	1b	1b
P 3	S3	3倍	1f	1f	1f
P 4	**VPS/PDC**	標準	1g	1g	1g
P 5	**SVHS**	◷	1c	1c	1c
P 6	—	◺	1e	1e	1e
P 7	—	OO	1d	1d	1d
P 8	B9	**VCR**	col2	1h	1h
P 9	B8	ビデオ	2a	2a	2a
P10	B7	⇨	2b	2b	2b
P11	B6	**VN**	2f	2f	2f
P12	B5	**LD**	2g	2g	2g
P13	B4	**SP**	2c	2c	2c
P14	B3	**S** (SEP)	2e	2e	2e
P15	B2	**:** (SEP)	2d	2d	2d
P16	B1	**LP** (SEP)	2h	col1	**REVIEW**

4.23 FDP GRID ASSIGNMENT AND ANODE CONNECTION [HR-S7700EK/EU]

GRID ASSIGNMENT


6G
5G
4G
3G
2G
1G
1
+8
4
0
6
−15dB
NORM 2
VPS/PDC
VCR
SVHS
VN⇨LD
SP S L:P
REVIEW
2a
1a
1h
col2
col1
1b
1c
1d
1e
1f
1g
B10
B1
+8 S4
S3
S2
S1
(6G, 5G)
(4G)

ANODE CONNECTION

	6G	5G	4G	3G	2G	1G
P 1	—	|⇨	S2	1a	1a	1a
P 2	—	⇨|	S1	1b	1b	1b
P 3	—	S4	S3	1f	1f	1f
P 4	—	NORM	**VPS/PDC**	1g	1g	1g
P 5	1	2	◷	1c	1c	1c
P 6	▣	▣	◺	1e	1e	1e
P 7	B10	B10	OO	1d	1d	1d
P 8	B9	B9	**VCR**	col2	1h	1h
P 9	B8	B8	1a	2a	col1	2a
P10	B7	B7	1b	2b	⇨	2b
P11	B6	B6	1f	2f	**VN**	2f
P12	B5	B5	1g	2g	**LD**	2g
P13	B4	B4	1c	2c	**SP**	2c
P14	B3	B3	1e	2e	**S** (SEP)	2e
P15	B2	B2	1d	2d	**:** (SEP)	2d
P16	B1	B1	1h	**SVHS**	**LP** (SEP)	**REVIEW**

MODE PIN NO.	REC	PLAY
5	0	0
6	2.2	2.4
7	2.4	2.4
CN2002		
1	0	0
2	0	0
CN2051		
1	7.9	0.2
2	0	0
3	0	0
4	0	0

<AUDIO ERASE>

MODE PIN NO.	REC	PLAY
Q2051		
E	-	-
C	-	-
B	-	-
CN2052		
1	7.9	0.2
2	0	0
3	0	0
4	0	0

<SYSTEM CONTROL>

MODE PIN NO.	REC	PLAY
IC3001		
1	2.7	2.4
2	0	0
3	1.8	2.4
4	2.4	2.4
5	0	0.3
6	2.5	2.5
7	2.4	2.4
8	2.4	2.4
9	4.8	4.8
10	4.9	4.9
11	0	0
12	0	0
13	0	2.5
14	4.1	4.1
15	4.5	4.8
16	0.5	0.5

MODE PIN NO.	REC	PLAY
17	0	0
18	0	0
19	0.6	0.6
20	4.5	4.5
21	3.9	3.9
22	0	1.8
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	4.9	4.9
31	4.9	4.9
32	4.9	4.9
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	1.8
39	4.3	4.3
40	0	0
41	4.9	4.9
42	4.5	4.5
43	0	0
44	0	0
45	4.9	4.9
46	0	0
47	0	0
48	0	0
49	4.0	4.0
50	4.8	4.6
51	4.9	4.9
52	-	-
53	4.3	4.3
54	-	-
55	-	-
56	0	0
57	0	0
58	4.9	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0

MODE PIN NO.	REC	PLAY
69	-	-
70	4.8	4.8
71	4.8	4.8
72	4.8	4.8
73	4.8	4.8
74	0	0
75	4.5	4.5
76	4.5	4.5
77	0	0
78	0	0
79	0	0
80	0	0
81	0	0
82	4.9	4.9
83	0	0
84	0	0
85	0	0
86	2.0	2.0
87	0	0
88	4.9	4.9
89	0	0
90	0	0
91	2.8	2.8
92	4.9	4.9
93	0	0
94	4.9	4.9
95	4.9	4.9
96	0	4.9
97	4.9	4.9
98	0.3	0.3
99	0	-
100	-	-
101	2.5	2.5
102	1.2	1.2
103	0	0
104	4.8	4.8
105	0	0
106	0	0
107	0	0
108	1.5	1.5
109	4.9	4.9
110	0	0
111	0	0
112	2.4	2.4
IC3002		
1	4.9	4.9
2	4.9	4.9
3	0	0
IC3003		
1	0	0
2	0	0
3	0	0

MODE PIN NO.	REC	PLAY
4	0	0
5	4.5	4.5
6	4.5	4.5
7	0	0
8	4.9	4.9
IC3004		
1	12.0	12.0
2	0.1	0.1
3	0	0
4	0.1	0.1
5	12.0	12.0
6	12.0	12.0
7	0	0
8	0	0
9	0	0
1C3601		
1	0	0
2	0	0
3	0	0
4	0	3.9
5	4.5	4.6
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	4.8	4.8
14	3.6	3.6
15	0	0
16	4.9	4.9
IC3651		
1	0	0
2	0	0
3	0	-
4	0	0
5	3.1	3.1
6	4.5	4.5
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	4.9	4.9
Q3001		
E	0	0
C	12.0	12.0

MODE PIN NO.	REC	PLAY
B	0	0
Q3002		
E	0	0
C	3.9	3.9
Q3003		
E	0	0
C	4.5	4.5
Q3004		
E	0	0
C	0	0
B	0.7	0.7
Q3005		
E	4.9	4.9
C	5.6	5.6
B	5.6	5.6
Q3007		
E	0	0
C	4.7	4.7
B	0	0
Q4001		
E	0	0
C	0	0
B	4.8	4.8
CN3001		
1	12.0	12.0
2	0	0
3	1.4	1.4
4	0	0
5	1.5	1.5
CN3002		
1	0.1	0
2	0.1	0
CN3003		
1	0	0
2	2.5	2.5
3	2.5	2.5
4	5.0	5.0
5	0	0
6	4.9	4.9
7	-	-
8	11.2	11.2
CN3004		
1	4.9	4.9
2	4.9	4.9
3	0	0
4	0	0
CN3011		
1	4.9	4.9
2	0	0
3	4.9	4.9
4	4.9	4.9
5	4.3	4.3

MODE PIN NO.	REC	PLAY
6	4.9	4.9
7	4.5	-
8	4.3	4.3
9	4.9	4.9
10	0	0
11	0	0
12	-17.3	-17.3
13	-13.9	-13.9
14	-26.2	-26.2
CN3012 [HR-S7700EK/EU]		
1	0.5	0.5
2	0.5	0.5
3	0	0
4	0	0
5	0	0
6	0	0

<SW.REG>

MODE PIN NO.	REC	PLAY
IC5101		
1	64.6	62.7
2	-	-
3	0	0
4	-	-
5	-	-
IC5301		
1	5.6	5.6
2	5.1	5.1
3	4.5	4.5
4	0	0
5	11.9	11.9
6	11.2	11.2
7	12.0	12.0
8	5.6	5.6
9	1.3	1.3
10	4.0	4.0
Q5301		
E	22.3	22.3
C	11.3	11.3
B	22.3	22.3
Q5302		
E	0	0
C	22.2	22.2
B	0	0
Q5303		
E	5.0	5.0

MODE PIN NO.	REC	PLAY
C	5.6	5.6
B	5.6	5.6
Q5304		
E	10.6	10.6
C	12.0	12.0
B	11.2	11.2
Q5305		
E	12.0	12.0
C	12.0	12.0
B	0.6	0.6
Q5310		
E	0	0
C	0	0
B	3.1	3.1
Q5311		
E	30.9	31.2
C	30.8	31.2
B	30.2	30.5
Q5312		
E	-13.9	-13.9
C	-13.8	-13.8
B	-13.2	-13.2
Q5318		
E	5.6	5.6
C	5.6	5.6
B	1.0	1.0

<TUNER>

MODE PIN NO.	REC	PLAY
IC6080		
1	3.9	3.9
2	0	0
3	3.9	3.9
4	3.9	3.9
5	11.2	11.2
Q6030		
E	0.8	0.8
C	0	0
B	0	0
Q6031		
E	0	0
C	0	0
B	4.8	4.8
Q6032		
E	0	0
C	0	0
B	4.8	4.8

MODE PIN NO.	REC	PLAY
CN6701		
1	0	0
2	4.6	4.6
3	4.5	4.5
4	4.8	4.8
5	0.3	0.3
6	0.3	0.3
7	4.9	4.9
8	0	0
9	0	0
10	0	0

<CONNECTION>

MODE PIN NO.	REC	PLAY
Q7201		
E	0	0
C	4.9	4.9
B	0	0
CN501		
1	2.5	2.5
2	0	0
3	2.5	2.7
4	5.0	5.0
5	2.4	2.4
6	0.1	4.9
7	3.3	3.3
8	0	0
9	2.9	2.9
10	0	0
11	4.7	4.7
12	4.1	4.1
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
CN502		
1	0.1	4.9
2	4.1	4.1
3	4.7	4.7
4	2.4	2.4
5	4.9	4.9
6	4.9	4.9
7	0	0
8	0	0
9	2.5	2.7

MODE PIN NO.	REC	PLAY
10	2.4	2.4
11	3.3	3.3
12	2.9	2.9
13	2.8	2.8
14	0	0
15	0	0
16	2.4	2.1
17	1.3	2.3
18	4.6	4.6
19	2.8	0.7
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	2.4	2.4
26	0	0
27	2.6	2.3
28	0	0
29	3.5	2.4
30	2.8	2.8
CN901		
1	0	0
2	0	0
3	0	0
4	0	0
CN902		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
CN903		
1	3.1	3.1
2	0	0
3	0	0
4	0.1	0.1
5	0	0
6	2.4	2.4
7	0	0
8	10.6	10.6
9	0	0
10	11.2	11.2
11	0.8	0.8
12	4.9	4.9
CN904		
1	0	0
2	4.6	4.6
3	4.9	4.9
4	0	0
5	3.0	3.0
6	4.3	4.3

MODE PIN NO.	REC	PLAY
7	4.5	4.5
8	4.9	4.9
9	0	0
10	4.3	4.3
11	0	0
12	2.1	2.1
CN905		
1	4.6	4.6
2	4.5	4.5
3	4.8	4.8
4	0	0
5	0	0
CN907		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0.3	0.3
9	0	0
10	0	0

<2D DIGITAL>
[HR-S6700EK/EU]

MODE PIN NO.	REC	PLAY
IC1201	-	-
Q1201	-	-
Q1202	-	-
Q1203	-	-
Q1204	-	-
Q1205	-	-
Q1206	-	-
CN1201		
1	2.5	2.5
2	0	0
3	2.5	2.7
4	5.0	5.0
5	2.4	2.4
6	0.1	4.9
7	3.3	3.3
8	0	0
9	2.9	2.9
10	0	0
11	4.7	4.7
12	4.1	4.1
13	-	-

MODE PIN NO.	REC	PLAY
14	-	-
15	-	-
16	-	-
17	-	-

<3D DIGITAL/2M>
[HR-S7700EK/EU]

MODE PIN NO.	REC	PLAY
IC1401	-	-
Q1401	-	-
Q1402	-	-
Q1403	-	-
Q1404	-	-
Q1406	-	-
Q1407	-	-
Q1408	-	-
Q1410	-	-
Q1412	-	-
Q1413	-	-
Q1414	-	-
Q1417	-	-
Q1418	-	-
Q1419	-	-
Q1420	-	-
CN1401		
1	2.5	2.5
2	0	0
3	2.5	2.7
4	5.0	5.0
5	2.4	2.4
6	0.1	4.9
7	3.3	3.3
8	0	0
9	2.9	2.9
10	0	0
11	4.7	4.7
12	4.1	4.1
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-

<TERMINAL>

MODE PIN NO.	REC	PLAY
IC201		
1	0	0
2	2.5	2.5
3	4.6	4.6
4	0	0
5	4.6	4.6
6	2.4	2.4
7	2.5	2.5
8	4.9	4.9
9	3.2	3.2
10	4.3	4.3
11	4.5	3.8
12	4.9	4.9
13	2.9	2.9
14	2.8	2.8
15	0	0
16	1.2	1.2
17	0	0
18	4.9	4.9
19	2.4	2.4
20	0	0
21	2.4	2.4
22	0.5	0.5
23	4.9	4.9
24	2.8	2.8
25	2.4	2.4
26	4.9	4.9
27	4.6	4.6
28	3.5	3.5
29	4.9	4.9
30	4.9	4.9
Q207		
E	3.1	3.1
C	0	0
B	2.4	2.4
IC901	-	-
Q901		
E	0	0
C	2.5	0
B	0	0
Q902		
E	0	0
C	0	0
B	0	0
Q903		
E	-	-
C	-	-
B	-	-
Q904		
E	-	-
C	-	-
B	-	-
Q905		
E	0	0
C	1.8	1.8
B	0.6	0.6
Q906		
E	1.2	1.2
C	8.3	8.3
B	1.8	1.8
Q907		
E	7.7	7.7
C	10.6	10.6
B	8.3	8.3
Q908		
E	6.1	6.1
C	0	0
B	5.4	5.4
Q909		
E	-	-
C	-	-
B	-	-
Q911		
E	0	0
C	8.0	8.0
B	0	0
Q912		
E	0	0
C	0	0
B	8.0	8.0
CN911		
1	0	0
2	3.1	3.1
3	0	0
4	2.4	2.4
5	0	0
6	2.4	2.4
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	2.5	0
13	0	0
14	0.2	0.2
CN913		
1	3.1	3.1
2	0	0
3	0	0
4	0.1	0.1
5	0	0
6	2.4	2.4
7	0	0
8	10.6	10.6
9	0	0
10	11.2	11.2
11	0.8	0.8
12	4.9	4.9
CN914		
1	0	0
2	4.6	4.6
3	4.9	4.9
4	0	0
5	3.0	3.0
6	4.3	4.3
7	4.5	4.5
8	4.9	4.9
9	0	0
10	4.3	4.3
11	0	0
12	2.1	2.1
CN915		
1	4.6	4.6
2	4.5	4.5
3	4.8	4.8
4	0	0
5	0	0
CN917		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0.3	0.3
9	0	0
10	0	0

<DEMODULATOR>

MODE PIN NO.	REC	PLAY
IC6701	-	-
Q6701		
E	2.2	2.2
C	4.9	4.9
B	2.9	2.9
CN6701		
1	0	0
2	4.6	4.6
3	4.5	4.5
4	4.8	4.8
5	0.3	0.3
6	0.3	0.3
7	4.9	4.9
8	0	0
9	0	0
10	0	0

<S-SUB>

MODE PIN NO.	REC	PLAY
IC501	-	-
IC502	-	-
CN511		
1	0.1	4.9
2	4.1	4.1
3	4.7	4.7
4	2.4	2.4
5	4.9	4.9
6	4.9	4.9
7	0	0
8	0	0
9	2.5	2.7
10	2.4	2.4
11	3.3	3.3
12	2.9	2.9
13	2.8	2.8
14	0	0
15	0	0
16	2.4	2.1
17	1.3	2.3
18	4.6	4.6
19	2.8	0.7
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	2.4	2.4
26	0	0
27	2.6	2.3
28	0	0
29	3.5	2.4
30	2.8	2.8
CN512		
1	0	0
2	3.1	3.1
3	0	0
4	2.4	2.4
5	0	0
6	2.4	2.4
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	2.5	0
13	0	0
14	0.2	0.2

<SWITCH/DISPLAY>
[HR-S6700EK/EU]

MODE PIN NO.	REC	PLAY
IC7001		
1	4.9	4.9
2	2.1	2.1
3	0	0
4	2.1	2.1
5	4.9	4.9
6	4.9	4.9
7	4.9	4.9
8	4.9	4.9
9	4.9	4.9
10	4.9	4.9
11	4.9	4.9
12	4.3	4.3
13	-	-
14	4.9	4.9
15	4.3	4.3
16	-26.1	-26.1
17	-26.1	-26.1
18	-25.9	-25.9
19	-25.9	-25.9
20	-25.9	-25.9
21	-22.0	-22.0
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-
39	-	-
40	-	-
41	-	-
42	-	-
43	-	-
44	4.9	4.9
IC7002		
1	4.9	4.9
2	4.9	4.9
3	0	0
CN7001		
1	-26.2	-26.2
2	-13.9	-13.9
3	-17.3	-17.3
4	0	0
5	0	0
6	4.9	4.9
7	4.3	4.3
8	4.5	4.5
9	4.9	4.9
10	4.3	4.3
11	4.9	4.9
12	4.9	4.9
13	0	0
14	4.9	4.9
CN7002		
1	4.9	4.9
2	4.9	4.9
3	4.9	4.9
4	4.9	4.9
5	4.9	4.9
6	0	0
CN7191		
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
FW7001		
1	4.9	4.9
2	0	0

<SHUTTLE/PLAY>
[HR-S6700EK/EU]

MODE PIN NO.	REC	PLAY
CN7005		
1	0	0
2	4.9	4.9
3	4.9	4.9
4	4.9	4.9
5	4.9	4.9
6	4.9	4.9

<SWITCH/DISPLAY>
[HR-S7700EK/EU]

MODE PIN NO.	REC	PLAY
IC7001		
1	4.9	4.9
2	2.1	2.1
3	0	0
4	2.1	2.1
5	4.9	4.9
6	4.9	4.9
7	4.9	4.9
8	4.9	4.9
9	4.9	4.9
10	4.9	4.9
11	4.9	4.9
12	4.3	4.3
13	-	-
14	4.9	4.9
15	4.3	4.3
16	-26.1	-26.1
17	-26.1	-26.1
18	-25.9	-25.9
19	-25.9	-25.9
20	4.7	4.7
21	-22.0	-22.0
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-
39	-	-
40	-	-
41	-	-
42	-	-
43	-	-
44	4.9	4.9
IC7002		
1	4.9	4.9
2	4.9	4.9
3	0	0
CN7001		
1	-26.2	-26.2
2	-13.9	-13.9
3	-17.3	-17.3
4	0	0
5	0	0
6	4.9	4.9
7	4.3	4.3
8	-	-
9	4.9	4.9
10	4.3	4.3
11	4.9	4.9
12	4.9	4.9
13	0	0
14	4.9	4.9
CN7191		
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
FW7001		
1	4.9	4.9
2	0	0

<JOG>
[HR-S7700EK/EU]

MODE PIN NO.	REC	PLAY
CN7005		
1	0	0
2	0	0
3	0	0
4	0	0
5	0.5	0.5
6	0.5	0.5

<REC SAFETY>

MODE PIN NO.	REC	PLAY
FW7001		
1	4.9	4.9
2	0	0

<JACK>

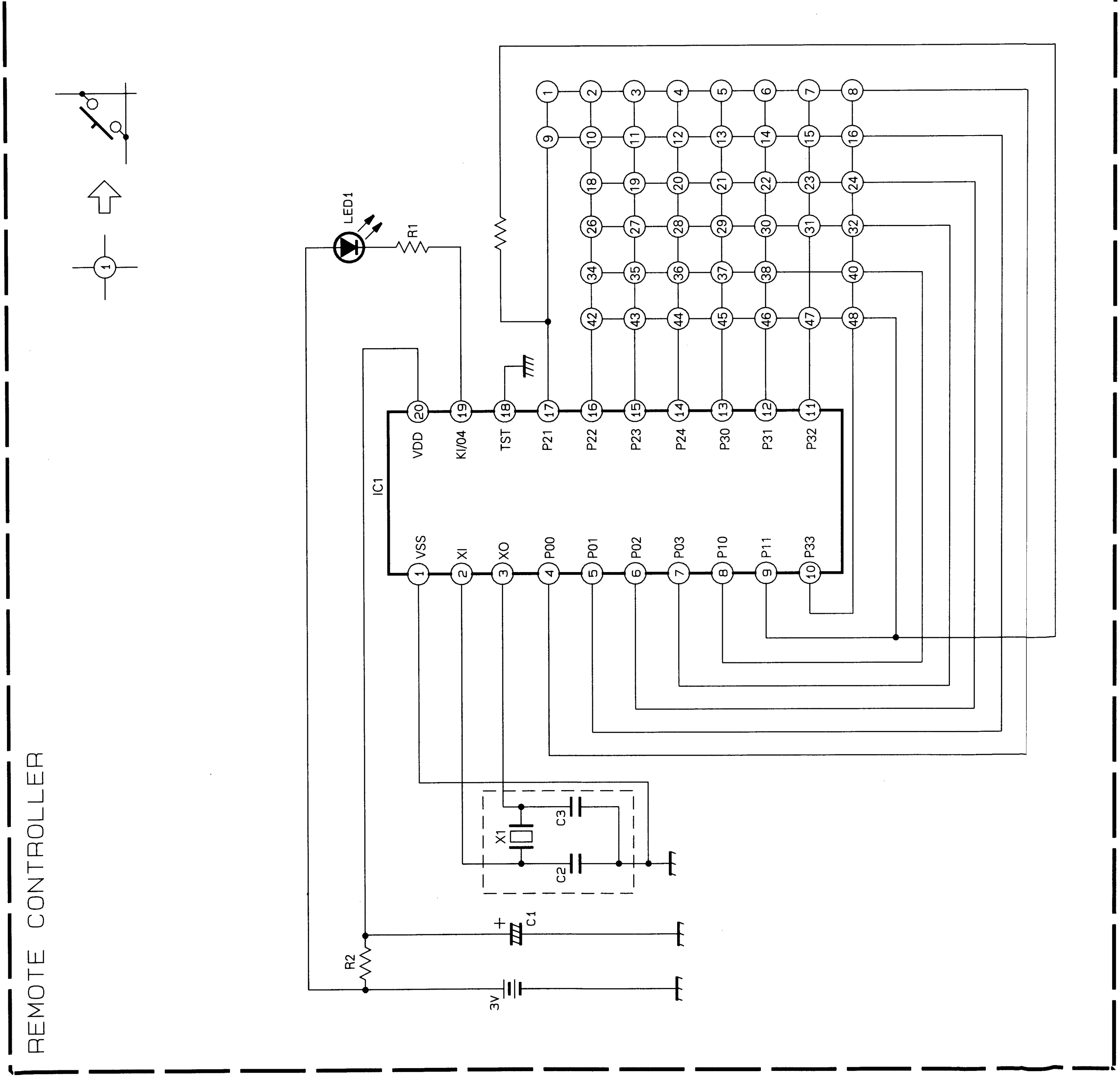
MODE PIN NO.	REC	PLAY
1	0	0
2	0	0
3	0	0
4	0	0

4.24 REMOTE CONTROL SCHEMATIC DIAGRAM

NOTES:

1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

Key No.	Key Name
1	TV
2	PROG
3	◷ ?(PROG CHECK)
4	ENTREE
5	30 SEC ⏩
6	PR –
7	DATE –
8	- - : - -
9	● (REC)
10	◀◀ ⏪ (REW)
11	PR +
12	START/DEBUT +
13	STOP/FIN +
14	DATE +
15	START/DEBUT –
16	STOP/FIN –
18	MENU
19	0 / AUX
20	8 / DAILY/QTDN.
21	4
22	▼
23	+⏮
24	◷
26	AUDIO/ 🔈/🔇 (MUTE)
27	▶ (PLAY)
28	X/0000(CANCEL)
29	7 / VSP/PDC
30	⏻/ I (POWER)
31	5
32	❚❚ (PAUSE)
34	2
35	6
36	TV/VCR
37	/ / // (SP/LP)
38	⏭
40	▶
42	3
43	⏩ ▶▶ (FF)
44	■ (STOP)
45	RE-VIEW
46	1
47	9 / WEEKLY/HEBDO
48	OK
9+27	REC START
9+32	REC PAUSE
1+30	POWER
1+36	TV/VCR
1+26	MUTE
1+37	MAIN/SUB
1+38	TV ⊿ –
1+40	TV PR +
1+23	TV ⊿ +
1+22	TV PR –



REMOTE CONTROLLER
LED1
R1
R2
IC1
X1
C1
C2
C3
3V
+
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
18
19
20
21
22
23
24
26
27
28
29
30
31
32
34
35
36
37
38
40
42
43
44
45
46
47
48
VDD
KI/04
TST
P21
P22
P23
P24
P30
P31
P32
VSS
XI
XO
P00
P01
P02
P03
P10
P11
P33

4.25 VOLTAGE CHARTS

<VIDEO/AUDIO>

MODE PIN NO.	REC	PLAY
IC1		
1	4.2	2.1
2	2.8	2.8
3	2.6	2.6
4	1.9	1.4
5	1.9	1.5
6	2.4	2.1
7	1.5	0.8
8	0	4.1
9	2.6	3.0
10	1.9	1.9
11	3.1	2.7
12	2.8	1.9
13	3.1	3.1
14	3.5	1.7
15	0	0
16	2.8	2.8
17	1.5	1.5
18	2.8	2.8
19	0	1.8
20	2.8	2.8
21	1.6	2.0
22	2.8	2.8
23	3.1	2.8
24	4.9	5.0
25	0.3	0.3
26	0	0
27	1.3	2.1
28	2.8	2.3
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.5	2.5
33	4.9	4.9
34	2.7	2.4
35	4.9	4.9
36	2.5	2.5
37	2.3	2.3
38	-	-
39	1.3	1.3
40	-	-
41	2.7	2.7
42	2.2	2.2
43	0	0
44	2.1	2.1
45	4.7	4.7
46	4.1	4.1
47	3.0	3.0
48	2.6	2.6
49	4.9	4.9
50	2.5	2.5
51	2.8	2.8

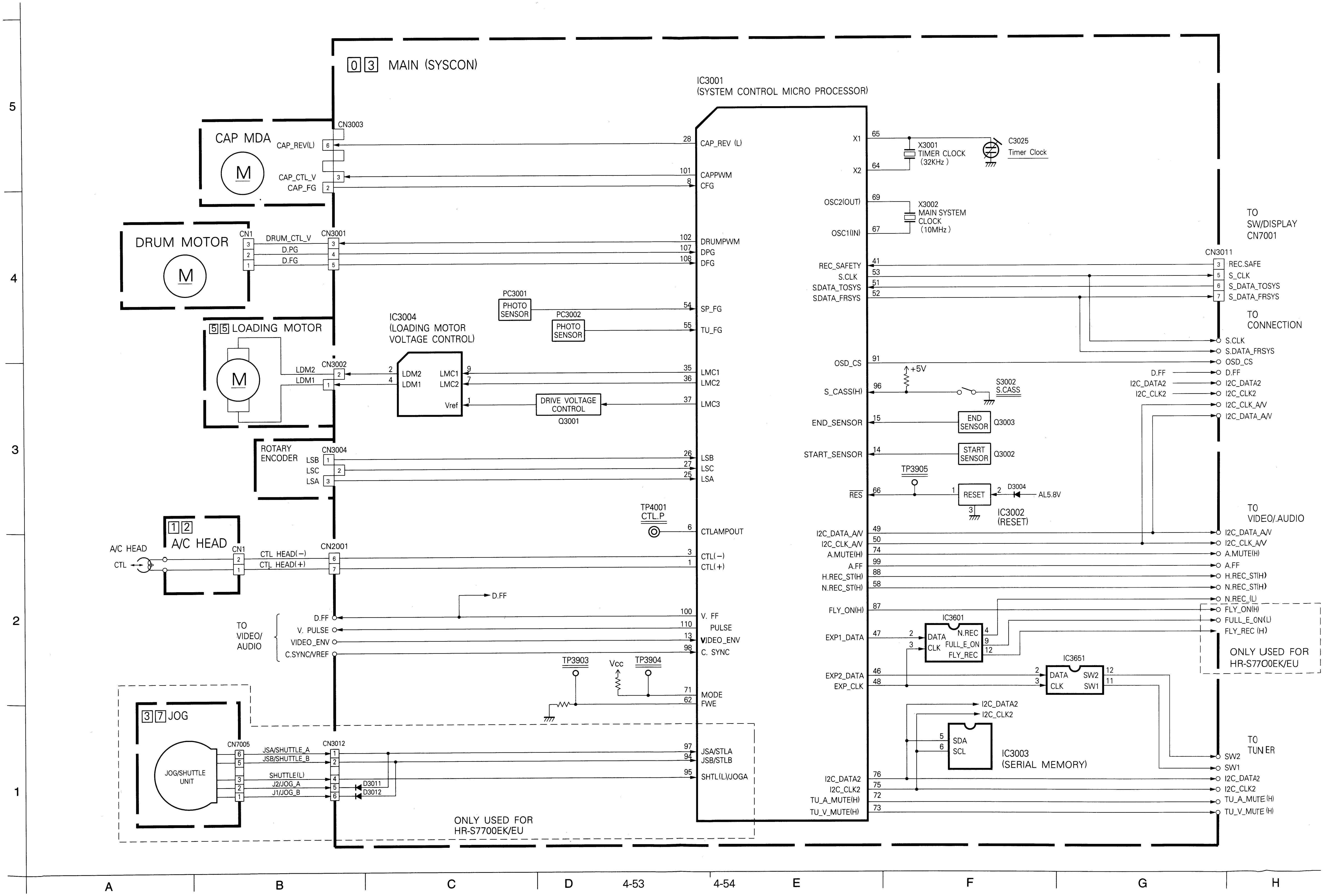
MODE PIN NO.	REC	PLAY
52	2.3	2.3
53	2.3	2.3
54	2.5	2.5
55	2.2	2.2
56	0.4	0.4
57	2.4	2.4
58	8.3	8.3
59	4.7	4.7
60	4.1	4.1
61	4.2	4.2
62	4.2	4.2
63	2.3	2.3
64	2.3	2.3
65	0.6	0.6
66	0.6	0.6
67	4.2	4.2
68	4.2	4.2
69	2.4	2.4
70	0	0
71	0.3	0.3
72	0.2	0.2
73	0.3	0.3
74	2.3	2.3
75	2.6	2.6
76	0	0
77	2.6	2.6
78	0.3	0.3
79	0.2	0.2
80	0.2	0.2
81	2.3	2.3
82	0.8	0.8
83	0	0
84	2.4	2.4
85	2.3	2.3
86	2.3	2.3
87	1.7	1.9
88	2.3	2.3
89	2.3	2.3
90	2.4	2.4
91	0	0
92	0	0
93	0	2.3
94	0	1.7
95	0	0
96	2.5	2.3
97	2.7	2.3
98	2.5	2.3
99	5.0	5.0
100	5.0	5.0
101	0	0
102	0	0
103	0	0

MODE PIN NO.	REC	PLAY
104	2.4	2.4
105	2.4	2.4
106	2.4	2.4
107	5.0	5.0
108	0	0
109	0	0
110	0	0
111	0	2.6
112	2.6	2.6
113	1.7	0.5
114	0	0
115	2.5	2.5
116	2.5	2.5
117	2.5	2.5
118	0	0
119	2.5	2.5
120	4.7	4.5
Q1 [HR-S6700EK/EU]		
E	2.4	2.4
C	2.4	2.4
B	0	0
Q2 [HR-S6700EK/EU]		
E	2.4	2.4
C	2.4	2.4
B	0	0
Q3 [HR-S6700EK/EU]		
E	0	0
C	0	0
B	0.9	0.9
Q4 [HR-S6700EK/EU]		
E	0	0
C	0	0
B	0.9	0.9
Q5		
E	5.0	2.8
C	0	0
B	4.2	2.2
Q7		
E	1.2	1.2
C	3.8	3.8
B	1.9	1.9
Q8		
E	3.1	3.1
C	5.0	5.0
B	3.8	3.8
Q9		
E	3.7	3.7
C	0	0
B	3.1	3.1
Q10		
E	2.4	2.4
C	0	0

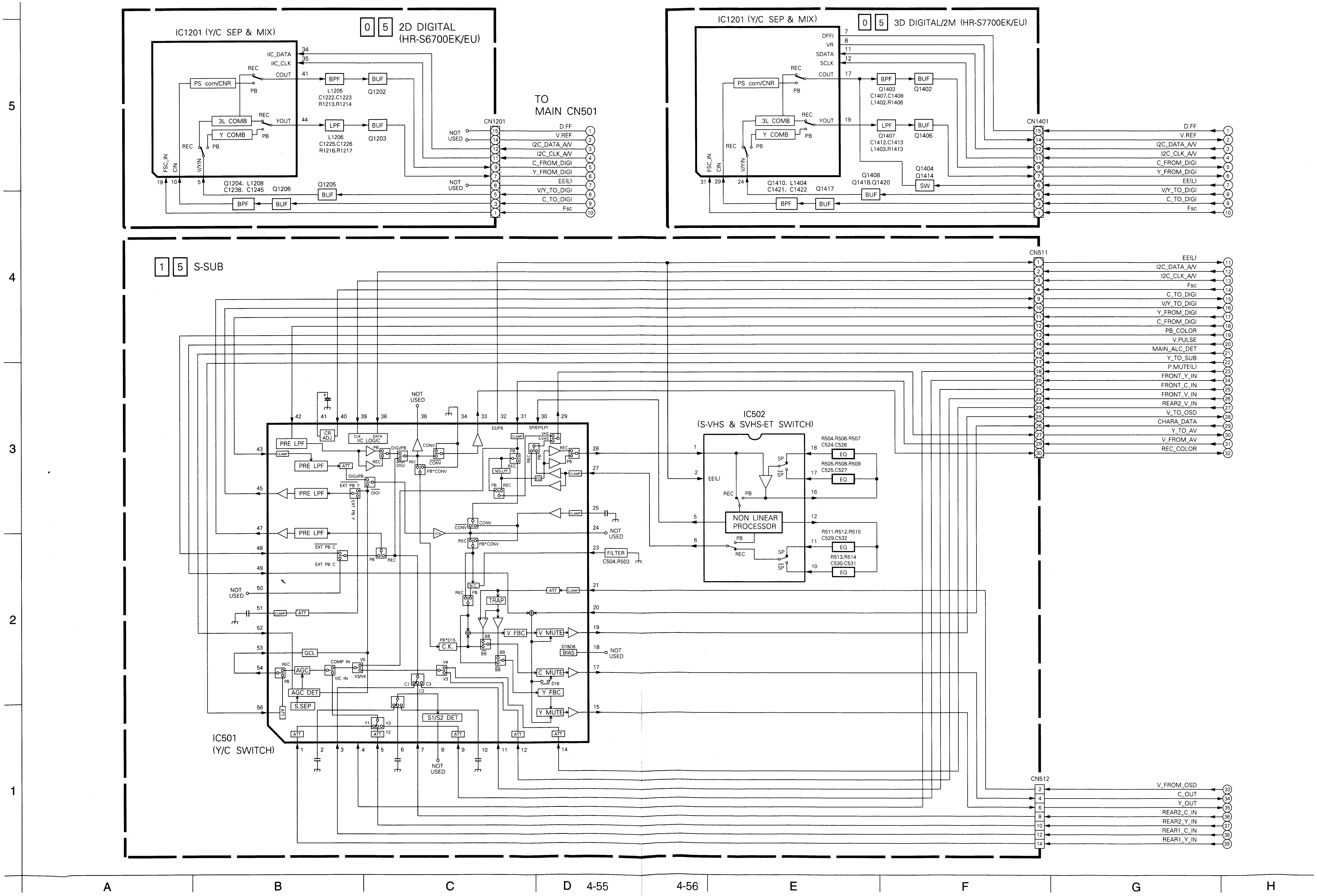
MODE PIN NO.	REC	PLAY
B	1.8	1.8
Q17		
E	0	0
C	0	0
B	4.8	4.8
Q18		
E	3.2	3.0
C	0	0
B	2.6	2.3
Q21		
E	2.8	2.8
C	0	0
B	2.1	2.1
Q38		
E	2.3	2.3
C	4.9	4.9
B	3.0	3.0
Q41		
E	0	0
C	0	0
B	0	0
Q401 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q402 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q403 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q404 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q405 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q2001		
E	-12.4	0
C	0	0
B	-19.0	0.7
Q2002		
E	-12.4	0
C	0	0
B	-18.7	0.7
Q2003		
E	4.9	5.0
C	-18.8	4.9

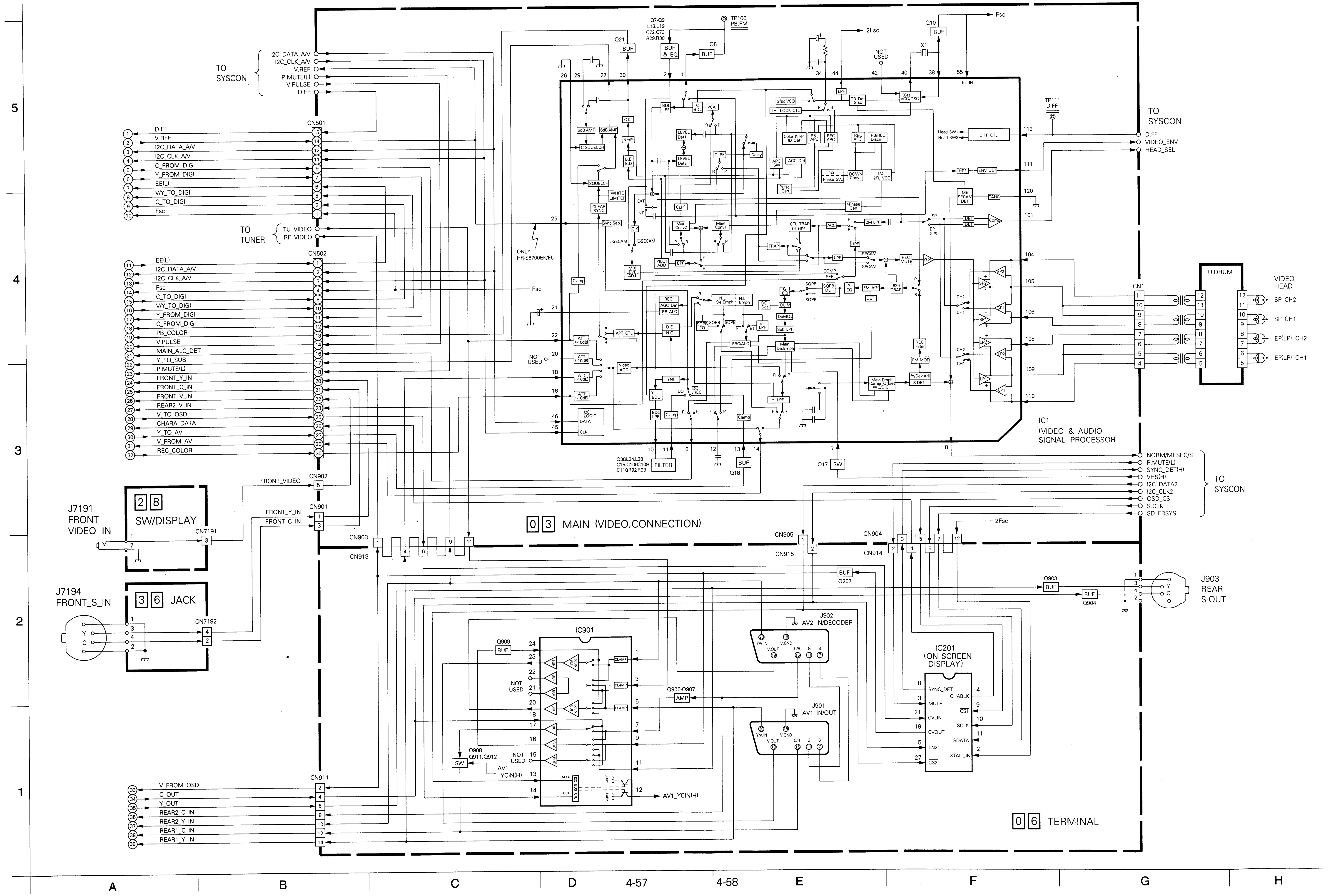
MODE PIN NO.	REC	PLAY
B	4.9	0
Q2004		
E	0	0
C	4.9	0
B	0.5	4.1
Q2052		
E	11.2	11.2
C	11.1	3.9
B	10.4	11.2
Q2053		
E	0	0
C	0	11.2
B	4.9	0
Q2054		
E	11.1	3.9
C	10.9	0.2
B	10.3	3.9
Q2061 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q2062 [HR-S7700EK/EU]		
E	-	-
C	-	-
B	-	-
Q2251		
E	5.0	5.0
C	1.7	1.7
B	4.9	4.9
Q2252		
E	0	0
C	0	0
B	3.6	3.6
CN1		
4	0	0
5	0	0
6	0	0
7	0	0
8	2.4	2.3
9	2.4	2.3
10	2.4	2.3
11	2.4	2.3
12	2.7	2.3
13	2.7	2.3
14	2.7	2.3
15	-	-
16	0	0
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0

4.26 SYSTEM CONTROL BLOCK DIAGRAM

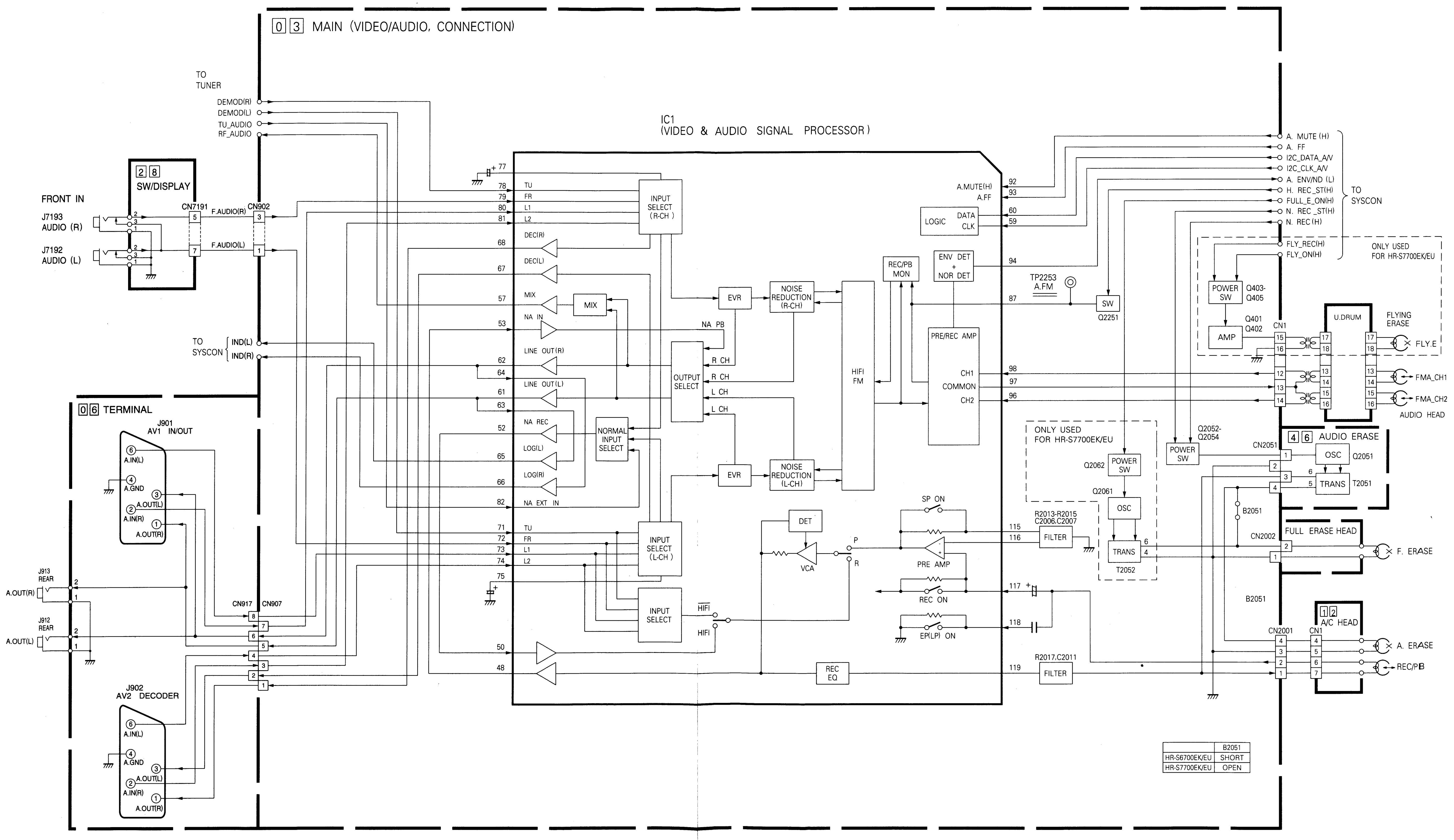

03 MAIN (SYSCON)
IC3001
(SYSTEM CONTROL MICRO PROCESSOR)
CAP MDA
CN3003
CAP_REV(L)
CAP_CTL_V
CAP_FG
28 CAP_REV (L)
101 CAPPWM
8 CFG
DRUM MOTOR
CN1
DRUM_CTL_V
D.PG
D.FG
CN3001
102 DRUMPWM
107 DPG
106 DFG
PC3001
PHOTO SENSOR
PC3002
PHOTO SENSOR
54 SP_FG
55 TU_FG
55 LOADING MOTOR
IC3004
(LOADING MOTOR VOLTAGE CONTROL)
LDM2
LDM1
CN3002
LMC1
LMC2
Vref
DRIVE VOLTAGE CONTROL
Q3001
35 LMC1
36 LMC2
37 LMC3
ROTARY ENCODER
CN3004
LSB
LSC
LSA
26 LSB
27 LSC
25 LSA
TP4001
CTL.P
6 CTLAMPOUT
12 A/C HEAD
A/C HEAD
CTL
CTL HEAD(−)
CTL HEAD(+)
CN2001
3 CTL(−)
1 CTL(+)
D.FF
TO VIDEO/ AUDIO
D.FF
V. PULSE
VIDEO_ENV
C.SYNC/VREF
100 V. FF
110 PULSE
13 VIDEO_ENV
98 C. SYNC
TP3903
Vcc
TP3904
71 MODE
62 FWE
37 JOG
JOG/SHUTTLE UNIT
CN7005
JSA/SHUTTLE_A
JSB/SHUTTLE_B
SHUTTLE(L)
J2/JOG_A
J1/JOG_B
CN3012
D3011
D3012
97 JSA/STLA
94 JSB/STLB
95 SHTL(L)/JOGA
ONLY USED FOR HR-S7700EK/EU
X1 65
X2 64
X3001 TIMER CLOCK (32KHz)
C3025 Timer Clock
OSC2(OUT) 69
OSC1(IN) 67
X3002 MAIN SYSTEM CLOCK (10MHz)
REC_SAFETY 41
S.CLK 53
SDATA_TOSYS 51
SDATA_FRSYS 52
TO SW/DISPLAY CN7001
CN3011
REC.SAFE
S_CLK
S_DATA_TOSYS
S_DATA_FRSYS
TO CONNECTION
S.CLK
S.DATA_FRSYS
OSC_CS
D.FF
I2C_DATA2
I2C_CLK2
I2C_CLK_A/V
I2C_DATA_A/V
OSD_CS 91
+5V
S_CASS(H) 96
S3002 S.CASS
END_SENSOR 15
END SENSOR Q3003
START_SENSOR 14
START SENSOR Q3002
TP3905
RES 66
RESET
D3004
AL5.8V
IC3002 (RESET)
TO VIDEO/AUDIO
I2C_DATA_A/V 49
I2C_CLK_A/V 50
A.MUTE(H) 74
A.FF 99
H.REC_ST(H) 88
N.REC_ST(H) 58
I2C_DATA_A/V
I2C_CLK_A/V
A.MUTE(H)
A.FF
H.REC_ST(H)
N.REC_ST(H)
N.REC_(L)
FLY_ON(H) 87
FLY_ON(H)
FULL_E_ON(L)
FLY_REC (H)
IC3601
EXP1_DATA 47
DATA
CLK
N.REC
FULL_E_ON
FLY_REC
ONLY USED FOR HR-S7700EK/EU
IC3651
EXP2_DATA 46
EXP_CLK 48
DATA
CLK
SW2
SW1
I2C_DATA2
I2C_CLK2
SDA
SCL
IC3003 (SERIAL MEMORY)
TO TUNER
SW2
SW1
I2C_DATA2 76
I2C_CLK2 75
TU_A_MUTE(H) 72
TU_V_MUTE(H) 73
I2C_DATA2
I2C_CLK2
TU_A_MUTE (H)
TU_V_MUTE (H)
1
2
3
4
5
A
B
C
D
E
F
G
H

4.27 VIDEO BLOCK DIAGRAM


0 5 2D DIGITAL (HR-S6700EK/EU)
IC1201 (Y/C SEP & MIX)
IIC_DATA
IIC_CLK
COUT
YOUT
PS com/CNR
3L COMB
Y COMB
REC
PB
FSC_IN
CIN
V/Y IN
BPF
BUF
LPF
L1205 C1222.C1223 R1213.R1214
Q1202
L1206 C1225.C1226 R1216.R1217
Q1203
Q1204. L1208 C1238. C1245
Q1206
Q1205
CN1201
NOT USED
D.FF
V.REF
I2C_DATA_A/V
I2C_CLK_A/V
C_FROM_DIGI
Y_FROM_DIGI
EE(L)
V/Y_TO_DIGI
C_TO_DIGI
Fsc
TO MAIN CN501
0 5 3D DIGITAL/2M (HR-S7700EK/EU)
DFFI
VR
SDATA
SCLK
Q1403 C1407.C1408 L1402.R1406
Q1402
Q1407 C1412.C1413 L1403.R1413
Q1406
Q1404 Q1414
SW
Q1408 Q1418.Q1420
Q1410. L1404 C1421. C1422
Q1417
CN1401
1 5 S-SUB
CN511
EE(L)
I2C_DATA_A/V
I2C_CLK_A/V
Fsc
C_TO_DIGI
V/Y_TO_DIGI
Y_FROM_DIGI
C_FROM_DIGI
PB_COLOR
V.PULSE
MAIN_ALC_DET
Y_TO_SUB
P.MUTE(L)
FRONT_Y_IN
FRONT_C_IN
FRONT_V_IN
REAR2_V_IN
V_TO_OSD
CHARA_DATA
Y_TO_AV
V_FROM_AV
REC_COLOR
IC501 (Y/C SWITCH)
PRE LPF
CLAMP
ATT
CR ADJ
IIC LOGIC
CLK
DATA
DIGI/PB
DIGI
CONV
PB•CONV
EE/PB
SP/EP(LP)
VHS
S-VHS
N/S-LPF
EQ
EXT PB Y
EXT PB C
VCA
N.C.
TRAP
V FBC
V MUTE
C MUTE
Y FBC
Y MUTE
C.K.
PB•D15
BB
D7&D8 BIAS
D16
GCL
AGC
AGC DET
S.SEP
COMP IN
Y/C IN
V3/V4
V4
V5
V3
C1
C2
C3
Y1
Y2
Y3
S1/S2 DET
FILTER C504.R503
NOT USED
IC502 (S-VHS & SVHS-ET SWITCH)
NON LINEAR PROCESSOR
SP
R504.R506.R507 C524.C526
R505.R508.R509 C525.C527
R511.R512.R515 C529.C532
R513.R514 C530.C531
CN512
V_FROM_OSD
C_OUT
Y_OUT
REAR2_C_IN
REAR2_Y_IN
REAR1_C_IN
REAR1_Y_IN
5
4
3
2
1
A
B
C
D
E
F
G
H


0 3 MAIN (VIDEO,CONNECTION)
0 6 TERMINAL
2 8 SW/DISPLAY
3 6 JACK
IC1 (VIDEO & AUDIO SIGNAL PROCESSOR)
IC901
IC201 (ON SCREEN DISPLAY)
TO SYSCON
I2C_DATA_A/V
I2C_CLK_A/V
V.REF
P.MUTE(L)
V.PULSE
D.FF
TO TUNER
TU_VIDEO
RF_VIDEO
CN501
CN502
CN902
CN901
CN903
CN913
CN905
CN915
CN904
CN914
CN911
CN7191
CN7192
CN1
D.FF
V.REF
I2C_DATA_A/V
I2C_CLK_A/V
C_FROM_DIGI
Y_FROM_DIGI
EE(L)
V/Y_TO_DIGI
C_TO_DIGI
Fsc
EE(L)
I2C_DATA_A/V
I2C_CLK_A/V
Fsc
C_TO_DIGI
V/Y_TO_DIGI
Y_FROM_DIGI
C_FROM_DIGI
PB_COLOR
V.PULSE
MAIN_ALC_DET
Y_TO_SUB
P.MUTE(L)
FRONT_Y_IN
FRONT_C_IN
FRONT_V_IN
REAR2_V_IN
V_TO_OSD
CHARA_DATA
Y_TO_AV
V_FROM_AV
REC_COLOR
FRONT_VIDEO
FRONT_Y_IN
FRONT_C_IN
J7191 FRONT VIDEO IN
J7194 FRONT_S_IN
V_FROM_OSD
C_OUT
Y_OUT
REAR2_C_IN
REAR2_Y_IN
REAR1_C_IN
REAR1_Y_IN
ONLY HR-S6700EK/EU
NOT USED
Q7-Q9 L18,L19 C72,C73 R29,R30
TP106 PB.FM
BUF & EQ
Q21 BUF
Q5 BUF
2Fsc
NOT USED
X1
Q10 BUF
Fsc
TP111 D.FF
TO SYSCON
D.FF
VIDEO_ENV
HEAD_SEL
U.DRUM
VIDEO HEAD
SP CH2
SP CH1
EP(LP) CH2
EP(LP) CH1
Q38,L24,L28 C15,C106,C109 C110,R92,R93
FILTER
BUF Q18
Q17 SW
NORM/MESEC/S
P.MUTE(L)
SYNC_DET(H)
VHS(H)
I2C_DATA2
I2C_CLK2
OSD_CS
S.CLK
SD_FRSYS
TO SYSCON
2Fsc
BUF Q207
Q903 BUF
BUF Q904
J903 REAR S-OUT
J902 AV2 IN/DECODER
J901 AV1 IN/OUT
Q909 BUF
Q905-Q907 AMP
Q908 Q911,Q912 SW
AV1 _YCIN(H)
AV1_YCIN(H)
SYNC_DET
MUTE
CV_IN
CVOUT
LN21
CS2
CHABLK
CS1
SCLK
SDATA
XTAL_IN
5
4
3
2
1
A
B
C
D
E
F
G
H

4.28 AUDIO BLOCK DIAGRAM



0 3 MAIN (VIDEO/AUDIO, CONNECTION)
TO TUNER
DEMOD(R)
DEMOD(L)
TU_AUDIO
RF_AUDIO
IC1 (VIDEO & AUDIO SIGNAL PROCESSOR)
2 8 SW/DISPLAY
FRONT IN
J7193 AUDIO (R)
J7192 AUDIO (L)
CN7191
F.AUDIO(R)
F.AUDIO(L)
CN902
TO SYSCON
IND(L)
IND(R)
0 6 TERMINAL
J901 AV1 IN/OUT
A.IN(L)
A.GND
A.OUT(L)
A.IN(R)
A.OUT(R)
J913 REAR
A.OUT(R)
J912 REAR
A.OUT(L)
CN917
CN907
J902 AV2 DECODER
TU
FR
L1
L2
DEC(R)
DEC(L)
MIX
NA IN
LINE OUT(R)
LINE OUT(L)
NA REC
LOG(L)
LOG(R)
NA EXT IN
INPUT SELECT (R-CH)
INPUT SELECT (L-CH)
INPUT SELECT
OUTPUT SELECT
NORMAL INPUT SELECT
NA PB
R CH
L CH
EVR
NOISE REDUCTION (R-CH)
NOISE REDUCTION (L-CH)
HIFI FM
HIFI
REC/PB MON
ENV DET + NOR DET
LOGIC
DATA
CLK
A.MUTE(H)
A.FF
PRE/REC AMP
CH1
COMMON
CH2
DET
VCA
P
R
PRE AMP
SP ON
REC ON
EP(LP) ON
REC EQ
TP2253 A.FM
SW
Q2251
R2013-R2015 C2006,C2007
FILTER
R2017,C2011
A. MUTE (H)
A. FF
I2C_DATA_A/V
I2C_CLK_A/V
A. ENV/ND (L)
H. REC_ST(H)
FULL_E_ON(H)
N. REC_ST(H)
N. REC (H)
TO SYSCON
FLY_REC(H)
FLY_ON(H)
ONLY USED FOR HR-S7700EK/EU
POWER SW
Q403-Q405
AMP
Q401 Q402
CN1
U.DRUM
FLYING ERASE
FLY.E
FMA_CH1
FMA_CH2
AUDIO HEAD
ONLY USED FOR HR-S7700EK/EU
Q2062
Q2061
OSC
TRANS
T2052
Q2052-Q2054
4 6 AUDIO ERASE
CN2051
Q2051
T2051
B2051
FULL ERASE HEAD
CN2002
F. ERASE
1 2 A/C HEAD
CN2001
A. ERASE
REC/PB
5
4
3
2
1
A
B
C
D
E
F
G
H

	B2051
HR-S6700EK/EU	SHORT
HR-S7700EK/EU	OPEN

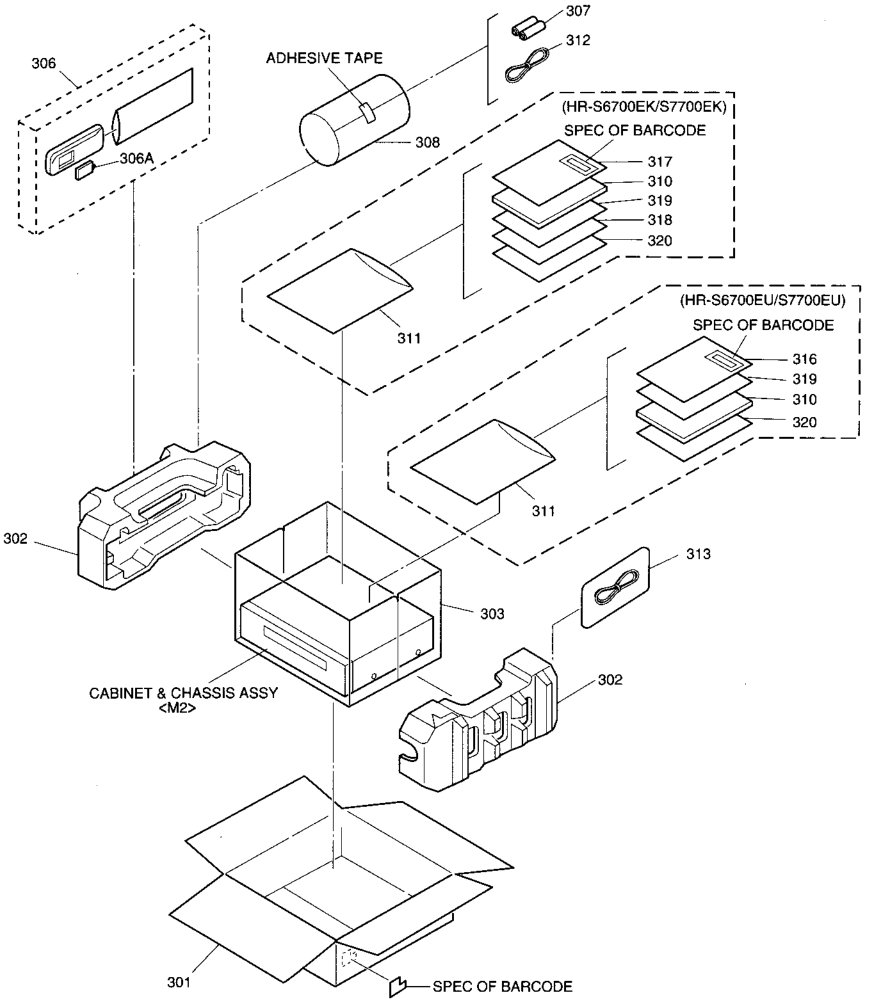
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



* *

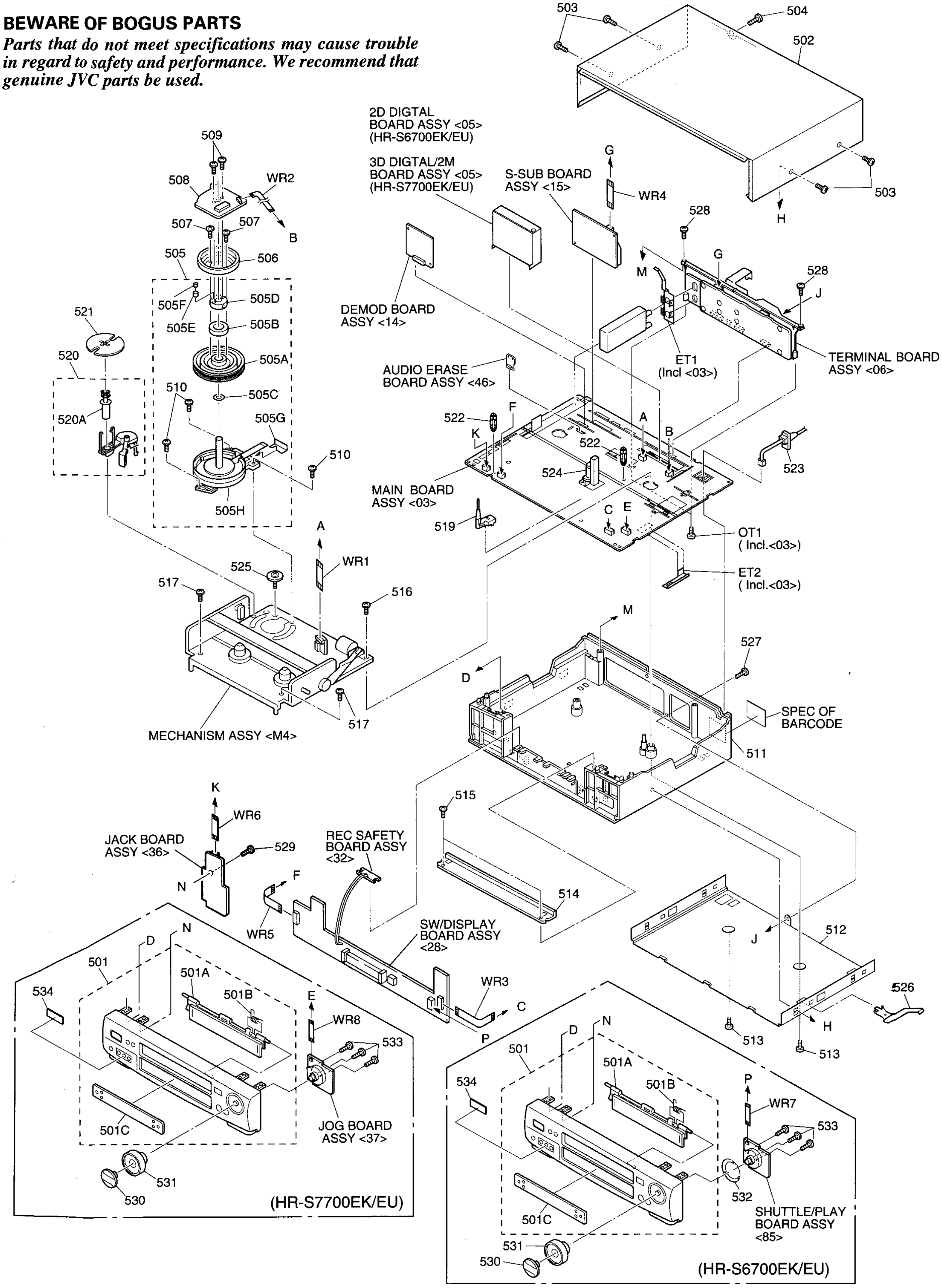
PACKING AND ACCESSORY ASSEMBLY <M1>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	301	LP30711-001A	PACKING CASE
	302	LP30606-002C	CUSHION ASSY
	303	PQM30021-95	POLY BAG
	306	LP20878-002A	REMOTE CONTROLLER
	306A	LP40610-002A	COVER(BATTERY)
	307	-	BATTERY,X2("AA"TYPE)
	308	QPC02202230P	POLY BAG
⚠	310	LPT0317-001A	INST.BOOK(EN),S6700EK
⚠		LPT0318-001A	INST.BOOK(EN),S7700EK
⚠		LPT0325-001A	INST.BOOK(EN),S6700EU
⚠		LPT0325-002A	INST.BOOK(GE),S6700EU
⚠		LPT0325-003A	INST.BOOK(FR),S6700EU
⚠		LPT0325-004A	INST.BOOK(DU),S6700EU
⚠		LPT0325-005A	INST.BOOK(SP),S6700EU
⚠		LPT0325-006A	INST.BOOK(IT),S6700EU
⚠		LPT0325-007A	INST.BOOK(DA),S6700EU
⚠		LPT0325-008A	INST.BOOK(FI),S6700EU
⚠		LPT0325-009A	INST.BOOK(SW),S6700EU
⚠		LPT0325-010A	INST.BOOK(NO),S6700EU
⚠		LPT0325-011A	INST.BOOK(PT),S6700EU
⚠		LPT0325-012A	INST.BOOK(GR),S6700EU
⚠		LPT0325-013A	INST.BOOK(CZ),S6700EU
⚠		LPT0325-014A	INST.BOOK(PO),S6700EU
⚠		LPT0325-015A	INST.BOOK(HU),S6700EU
⚠		LPT0325-016A	INST.BOOK(RU),S6700EU
⚠		LPT0326-001A	INST.BOOK(EN),S7700EU
⚠		LPT0326-002A	INST.BOOK(GE),S7700EU
⚠		LPT0326-003A	INST.BOOK(FR),S7700EU
⚠		LPT0326-004A	INST.BOOK(DU),S7700EU
⚠		LPT0326-005A	INST.BOOK(SP),S7700EU
⚠		LPT0326-006A	INST.BOOK(IT),S7700EU
⚠		LPT0326-007A	INST.BOOK(DA),S7700EU
⚠		LPT0326-008A	INST.BOOK(FI),S7700EU
⚠		LPT0326-009A	INST.BOOK(SW),S7700EU
⚠		LPT0326-010A	INST.BOOK(NO),S7700EU
⚠		LPT0326-011A	INST.BOOK(PT),S7700EU
⚠		LPT0326-012A	INST.BOOK(GR),S7700EU
⚠		LPT0326-013A	INST.BOOK(CZ),S7700EU
⚠		LPT0326-014A	INST.BOOK(PO),S7700EU
⚠		LPT0326-015A	INST.BOOK(HU),S7700EU
⚠		LPT0326-016A	INST.BOOK(RU),S7700EU
	311	QPC02503530P	POLY BAG
	312	PEAC0300-02	RF CABLE
	313	QAL0095-005	LED CABLE ASSY(Satellite Controller)
	316	BT-54013-1	WARRANTY CARD,S6700EU/S7700EU
	317	BT-54008-2	GUARANTY CARD,S6700EK/S7700EK
	318	LYT0194-001A	Q.CARD(JUK),S6700EK/S7700EK
	319	LP40437-001A	LABEL(S-VHS ET)
	320	LP40605-001A	SHEET

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

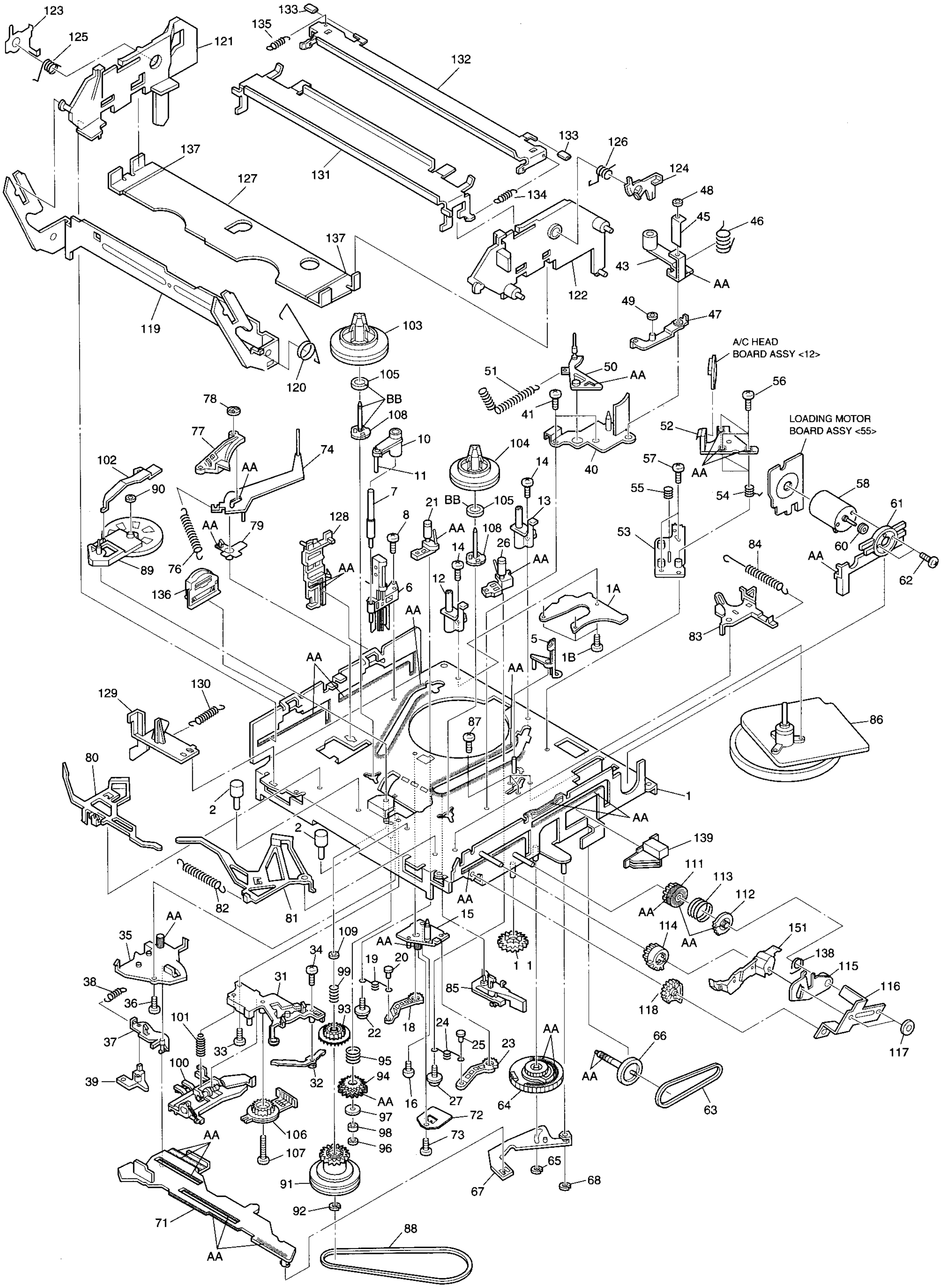

503
504
502
503
H
2D DIGTAL BOARD ASSY <05> (HR-S6700EK/EU)
3D DIGTAL/2M BOARD ASSY <05> (HR-S7700EK/EU)
S-SUB BOARD ASSY <15>
G
WR4
528
G
M
528
J
TERMINAL BOARD ASSY <06>
ET1 (Incl <03>)
DEMOD BOARD ASSY <14>
AUDIO ERASE BOARD ASSY <46>
509
508
WR2
B
507
507
505
506
505F
505D
505E
505B
505A
505C
505G
510
510
505H
521
520
520A
522
F
K
A
B
522
524
523
MAIN BOARD ASSY <03>
C
E
519
OT1 (Incl.<03>)
ET2 (Incl.<03>)
A
WR1
525
517
516
517
MECHANISM ASSY <M4>
M
527
D
SPEC OF BARCODE
511
K
WR6
JACK BOARD ASSY <36>
529
N
F
WR5
REC SAFETY BOARD ASSY <32>
515
514
SW/DISPLAY BOARD ASSY <28>
WR3
C
P
512
J
526
H
513
513
D
N
501
534
501A
501B
E
WR8
533
501C
JOG BOARD ASSY <37>
531
530
(HR-S7700EK/EU)
D
N
501
534
501A
501B
P
WR7
533
501C
532
SHUTTLE/PLAY BOARD ASSY <85>
531
530
(HR-S6700EK/EU)

****

CABINET AND CHASSIS ASSEMBLY <M2>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	⚠	501	LP10217-026A	FRONT PANEL ASSY,S6700EU
	⚠		LP10217-027A	FRONT PANEL ASSY,S6700EK
	⚠		LP10217-030A	FRONT PANEL ASSY,S7700EU
	⚠		LP10217-031A	FRONT PANEL ASSY,S7700EK
		501A	LP20342-043A	CASSETTE DOOR,S6700EK/EU
			LP20342-046A	CASSETTE DOOR,S7700EK/EU
		501B	PQ46448	TORSION SPRING
		501C	LP30531-020A	DISPLAY WINDOW,S6700EU
			LP30531-021A	DISPLAY WINDOW,S6700EK
			LP30531-024A	DISPLAY WINDOW,S7700EU
			LP30531-025A	DISPLAY WINDOW,S7700EK
	⚠	502	PQ11676-95-20	TOP COVER
		503	QYTDSF3010R	SCREW,X4 TOP COVER(SIDE)
		504	QYTDSF3010M	SCREW,TOP COVER(REAR)
		505	LP20617-011A	DRUM SUB ASSY,S6700EK/EU
			LP20617-014A	DRUM SUB ASSY,S7700EK/EU
		505A	LP20030-017A	UPPER DRUM ASSY,S7700EK/EU
			LP20616-005A	UPPER DRUM ASSY,S6700EK/EU
		505B	PDM4439	CAP
		505C	PDM4444-19-2	WASHER
		505D	LP40572-001A	COLLAR ASSY
		505E	LP40323-001A	CONTACT
		505F	LP30004-014A	COMPRESION SPRING
		505G	LP40174-001B	FPC PLATE
		505H	LP20615-002A	LOWER DRUM ASSY,S6700EK/EU
			LP20615-007A	LOWER DRUM ASSY,S7700EK/EU
		506	PDZ0179-1-4	ROTOR ASSY
		507	QYSPSP3006Z	SCREW,X2
	⚠	508	QAR0119-001	STATOR ASSY
		509	QYSPSPH2606Z	SCREW,X2
		510	QYTDST2610Z	SCREW,X3 DRUM
	⚠	511	LP10116-003J	BOTTOM CHASSIS
	⚠	512	PQ11668-2-12	BOTTOM COVER
		513	QYTDSF3010Z	SCREW,X2 B.COVER
		514	LP30312-001B	BRACKET(CHASSIS)
		515	QYTDSF3010Z	SCREW,X2
		516	QYTDSF4012Z	SCREW,MECHA
		517	QYTDSF3010Z	SCREW,X2 MECHA
		519	LP40407-001A	KNOB ASSY
		520	LP40370-001E	ROLLER ARM ASSY
		520A	PDM4311A-1	ROLLER ASSY
		521	PQ45160	INERTIA PLATE
		522	LP40226-001A	PC SUPPORT
	⚠	523	QMP4A10-170	POWER CORD,S6700EU/S7700EU
	⚠		QMP51K0-170-K	POWER CORD,S6700EK/S7700EK
		524	LP40253-001B	STOPPER
		525	PQ40413	SPECIAL SCREW,MECHA
		526	LP40659-001A	EARTH PLATE(2)
		527	QYTDSF3010M	SCREW,TERMINAL
		528	QYTPSFG3010Z	SCREW,,X2 TERMINAL
		529	QYTDSF3010Z	SCREW,S JACK
		530	LP30694-001A	KNOB(JOG),S7700EK/EU
			LP30698-001A	KNOB(PLAY),S6700EK/EU
		531	LP30695-001A	KNOB(SHUTTLE),S7700EK/EU
			LP30699-001A	KNOB(SHUTTLE),S6700EK/EU
		532	LP30703-001A	BASE,S6700EK/EU
		533	QYTDSF2608Z	SCREW,X3 JOG,S7700EK/EU
			QYTDSF2612Z	SCREW,X3 SHUTTLE,S6700EK/EU
		534	LP30532-001A	CAP(JACK)
		WR1	QUQ112-0720CG	FFC WIRE,A/C HEAD CN2001
		WR2	QUQ212-0518CG	FFC WIRE,DRUM CN3001
		WR3	QUQ112-1414CG	FFC WIRE,DISPLAY CN3011
		WR4	QUQ112-1407CG	FFC WIRE,TERMINAL CN512
		WR5	QUQ212-0516CG	FFC WIRE,JACK CN902
		WR6	QUQ212-0416CG	FFC WIRE,S(FSA) CN901
		WR7	QUQ112-0614CG	FFC WIRE,SHUTTLE CN7002,S6700EK/EU
		WR8	QUQ112-0616CG	FFC WIRE,JOG(FSA) CN3012 S7700EK/EU

5.3 MECHANISM ASSEMBLY <M4>


123
125
121
133
135
132
137
127
131
133
126
124
134
48
45
46
43
AA
137
122
119
120
103
49
47
A/C HEAD BOARD ASSY <12>
51
50
AA
105
BB
108
78
41
56
77
10
74
104
40
52
LOADING MOTOR BOARD ASSY <55>
102
AA
11
14
57
AA
90
7
21
BB
105
13
55
54
58
61
128
8
AA
108
AA
79
14
26
53
84
60
AA
62
89
76
AA
6
12
AA
136
AA
1A
83
5
1B
AA
AA
129
130
87
86
80
2
1
2
AA
139
82
81
111
113
112
AA
AA
15
AA
114
35
109
AA
151
34
138
115
38
99
19
20
31
36
116
101
93
22
18
85
118
1 1
24
25
23
AA
66
37
33
95
117
100
32
94
AA
AA
39
AA
16
27
64
63
106
97
72
AA
98
96
73
107
65
68
91
67
92
71
88
AA

Classifi-cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

MECHANISM ASSEMBLY <M4>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	LP20228-008H	MAIN DECK ASSY
1A	LP40275-003A	PLATE(SUPPLY)
1B	QYTDST2606Z	SCREW,X4 PLATE(SUPPLY)
5	LP30492-002B	GUIDE POLE GUARD
6	NAH0001-001	FULL ERASE HEAD
7	LP40098-001B	GUIDE POLE(SUPPLY)
8	QYTDST2608Z	SCREW,FE HEAD
10	LP30459-002A	TENSION STUD BASE
11	LP40367-002A	TENSION STUD
12	LP30409-002C	UV CATCHER 2(SUPPLY)
13	LP30409-002C	UV CATCHER 2(TAKE UP)
14	QYTPST2606Z	SCREW,X2 UV CATCHER
15	LP30223-003C	LOADING ARM GEA SHAFT
16	QYTDST2606Z	SCREW
18	LP30224-001A	LOADING ARM GEAR(SPPLY)
19	LP40099-001A	TORSION ARM
20	LP40100-001A	PIN
21	LP40101-002C	POLE BASE ASSY(SUPPLY)
22	QYSPSTG2606Z	SCREW
23	LP40103-002B	LOADING ARM GEAR(TAKE UP)
24	LP40099-001A	TORSION ARM
25	LP40100-001A	PIN
26	LP40104-003A	POLE BASE ASSY(TAKE UP)
27	QYSPSTG2606Z	SCREW
31	LP20233-004B	ROTARY ENCODER GUIDE
32	LP30499-001C	BRAKE LEVER
33	QYTPST2606Z	SCREW
34	QYTPST2608Z	SCREW
35	LP30226-004C	CONTROL PLATE GUIDE
36	QYTPST2605Z	SCREW
37	LP30249-003B	TAKE UP LEVER
38	LP30003-006A	TENSION SPRING
39	LP40119-002A	T.UP HEAD
40	LP20234-004B	LID GUIDE
41	QYTDST2606Z	SCREW,X2
43	LP40105-001B	PINCH ROLLER ARM ASSY
45	LP40478-001A	PINCH ROLLER SHEET2
46	LP40148-002A	TORSION SPRING
47	LP40149-001C	PRESS LEVER ASSY
48	LP30016-002A	SLIT WASHER
50	LP40106-002E	GUIDE ARM ASSY
51	LP40134-001C	TENSION SPRING
52	QAH0010-004	AC HEAD
53	LP30228-001A	HEAD BASE
54	LP30004-013A	COMPRESSION SPRING,X3
55	LP40236-001A	COMPRESSION SPRING
56	LP40213-002B	SPECIAL SCREW,X3
57	QYTDST2608Z	SCREW,X2
58	QAR0023-001	LOADING MOTOR
60	PQ43546-1-2	MOTOR PULLEY
61	LP30230-001B	MOTOR GUIDE
62	QYTPSP3003Z	SCREW,X2
63	LP30005-003A	BELT,LOADING MOTOR
64	LP20791-002C	CONTROL CAM
65	PQM30017-24	SLIT WASHER
66	LP40120-001A	WORM GEAR
67	LP40107-002A	LINK LEVER ASSY
68	PQM30017-24	SLIT WASHER
71	LP10201-003C	CONTROL PLATE
72	LP40379-001B	CONTROL BRACKET(1)
73	QYTDSF2608M	SCREW
74	LP40108-002A	TENSION ARM ASSY
76	LP30003-010A	TENSION SPRING
77	LP40109-003D	TENSION BRAKE ASSY
78	PQ46302-1-3	ADJUST PIN
79	LP30232-002A	T.ARM BEARING
80	LP40532-008A	MAIN BRAKE ASSY (SUPPLY)
81	LP40111-011A	MAIN BRAKE ASSY (TAKE-UP)
82	LP30003-026A	TENSION SPRING
83	LP40112-001F	SUB BRAKE ASSY(TAKE UP)
84	LP40357-002A	TENSION SPRING
85	LP40461-001A	CAPSTAN BRAKE ASSY
86	QAR0087-004	CAPSTAN MOTOR
87	QYTDSF2606M	SCREW,X3
88	LP30005-007A	BELT,CAPSTAN MOTOR
89	LP40114-008A	IDLER ARM ASSY
90	LP30016-001A	SLIT WASHER
91	LP40593-001A	CLUTCH UNIT 3
92	PQM30017-47	SLIT WASHER
93	LP40446-002B	CLUTCH GEAR 1
94	LP40442-001A	DIRECT GEAR
95	LP40483-002A	COMPRESSION SPRING
96	LP30016-001A	SLIT WASHER
99	LP40554-001A	COMPRESSION SPRING
100	LP40484-001H	CHANGE LEVER ASSY
101	LP40512-002B	COMRESSION SPRING
102	LP30236-002B	IDLER LEVER
103	LP40420-001A	REEL DISK (SUPPLY)
104	LP40421-001A	REEL DISK (TAKE-UP)
105	LP30017-015A	SPACER,X2
106	QSW0554-003	ROTARY ENCODER
107	QYTPST2620Z	SCREW,ROTARY ENCODER
109	LP30017-019A	SPACER,C.GEAR 1
110	LP30237-002B	CASSETTE GEAR
111	LP30239-002G	LIMIT GEAR(1)
112	LP30240-002G	LIMIT GEAR(2)
113	LP40136-001E	TORSION SPRING
114	LP30242-002A	RELAY GEAR
115	LP30339-002E	OPENER GUIDE
116	LP40214-001B	C.H.BRACKET
117	PQM30017-47	SLIT WASHER,X2
118	LP30243-001D	DRIVE GEAR
119	LP20240-001D	DRIVE ARM
120	LP40137-001A	TORSION SPRING
121	LP10081-002L	SIDE HOLDER(L)
122	LP10082-002M	SIDE HOLDER(R)
123	LP30255-006A	LOCK LEVER(L)
124	LP30256-001H	LOCK LEVER(R)
125	LP40168-001A	TORSION SPRING(L)
126	LP40218-001B	TORSION SPRING(R)
127	LP30257-001F	CASSETTE HOLDER
128	LP30244-002G	GUIDE RAIL
129	LP30245-002E	REC SAFETY LEVER
130	LP30003-004A	TENSION SPRING
131	LP20578-001C	TOP GUIDE
132	LP30500-001C	HOLD PLATE
133	LP40450-003A	PAD,X2 HOLD PLATE
134	LP30003-025B	TENSION SPRING
135	LP30003-024A	TENSION SPRING
136	LP40481-003A	ROLLER CAM ASSY
137	LP30019-014A	PAD,X2 CASSETTE HOLDER
138	LP40545-001A	TORSION SPRING,OPENER GUIDE
139	LP30493-001A	START SENSOR CAP
151	LP20324-003A	DOOR OPENER

5.4 ELECTRICAL PARTS LIST

****

MAIN BOARD ASSEMBLY <03>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PW1	LPA10106-01B1	MAIN BOARD ASSY,S6700EK/EU
	LPA10106-02B1	MAIN BOARD ASSY,S7700EK/EU
IC1	JCP8020-MSC	IC
IC3001	HD6432194AA01F	IC(MCU),S6700EK/EU
	HD6432194AA08F	IC(MCU),S7700EK/EU
IC3002	S-80727AN-DQ-X	IC
	or S-80827ANUP-W	IC
IC3003	AT24C16-10PC	IC
	or 24LC16B/P	IC
	or 3R24C16	IC
IC3004	BA6956AN	IC
IC3601	BU2090FS	IC
IC3651	BU2090FS	IC
IC5101	STR-G6551	IC
IC5301	LA5644	IC
IC6080	NJM2125F	IC
Q1	2SD1819A/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2SC4081/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2PC4081/R/-X	TRANSISTOR,S6700EK/EU
Q2	2SD1819A/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2SC4081/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2PC4081/R/-X	TRANSISTOR,S6700EK/EU
Q3	2SD1819A/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2SC4081/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2PC4081/R/-X	TRANSISTOR,S6700EK/EU
Q4	2SD1819A/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2SC4081/QRS/-X	TRANSISTOR,S6700EK/EU
	or 2PC4081/R/-X	TRANSISTOR,S6700EK/EU
Q5	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q7	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q8	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q9	2SB1218A/QR/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q10	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q17	DTC144WU	TRANSISTOR
	or PDTC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
	or UN521E	TRANSISTOR
Q18	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q21	2SB1218A/QR/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q38	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q41	DTC144WU	TRANSISTOR
	or PDTC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
	or UN521E	TRANSISTOR
Q401	2SA1576A/QR/-X	TRANSISTOR,S7700EK/EU
Q402	2SA1576A/QR/-X	TRANSISTOR,S7700EK/EU
Q403	DTC144WU	TRANSISTOR,S7700EK/EU
	or PDTC144WU	TRANSISTOR,S7700EK/EU
	or RN1309	TRANSISTOR,S7700EK/EU
	or UN521E	TRANSISTOR,S7700EK/EU
Q404	DTC144WU	TRANSISTOR,S7700EK/EU
	or PDTC144WU	TRANSISTOR,S7700EK/EU
	or RN1309	TRANSISTOR,S7700EK/EU
	or UN521E	TRANSISTOR,S7700EK/EU
Q405	2SA1576A/QR/-X	TRANSISTOR,S7700EK/EU
Q2001	2SC4081/QRS/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q2002	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
Q2003	DTA144WU	TRANSISTOR
	or PDTA144WU	TRANSISTOR
	or RN2309	TRANSISTOR
	or UN511E	TRANSISTOR
Q2004	DTC144WU	TRANSISTOR
	or PDTC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
	or UN521E	TRANSISTOR
Q2052	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SB1218A/QR/-X	TRANSISTOR
Q2053	DTC144WU	TRANSISTOR
	or PDTC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
	or UN521E	TRANSISTOR
Q2054	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SB1218A/QR/-X	TRANSISTOR
Q2061	2SC4081/QRS/-X	TRANSISTOR,S7700EK/EU
	or 2PC4081/R/-X	TRANSISTOR,S7700EK/EU
	or 2SD1819A/QRS/-X	TRANSISTOR,S7700EK/EU
Q2062	2SA1576A/QR/-X	TRANSISTOR,S7700EK/EU
	or 2PA1576/R/-X	TRANSISTOR,S7700EK/EU
	or 2SB1218A/QR/-X	TRANSISTOR,S7700EK/EU
Q2251	DTA144WU	TRANSISTOR
	or PDTA144WU	TRANSISTOR
	or RN2309	TRANSISTOR
	or UN511E	TRANSISTOR
Q2252	DTC114EU	TRANSISTOR
	or PDTC114EU	TRANSISTOR
	or UN5211	TRANSISTOR
	or RN1302	TRANSISTOR
Q3001	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q3002	PTZ-NV16	PHOTO TRANSISTOR
	or PTZ-NV16A	PHOTO TRANSISTOR
Q3003	PTZ-NV16	PHOTO TRANSISTOR
	or PTZ-NV16A	PHOTO TRANSISTOR
Q3004	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		Q3005	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q3007	UN521E	TRANSISTOR	
			or RN1309	TRANSISTOR	
			or DTC144WU	TRANSISTOR	
			or PDTC144WU	TRANSISTOR	
		Q4001	UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or DTC114EU	TRANSISTOR	
		Q5301	2SB1256	TRANSISTOR	
		Q5302	DTC114TU	TRANSISTOR	
			or PDTC114TU	TRANSISTOR	
			or RN1311	TRANSISTOR	
			or UN5215	TRANSISTOR	
	⚠	Q5303	2SD2144S/UVW/-T	TRANSISTOR	
		Q5304	2SD1450/ST/-T	TRANSISTOR	
			or 2SD1302/ST/-T	TRANSISTOR	
		Q5305	UN5111	TRANSISTOR	
			or PDTA114EU	TRANSISTOR	
			or DTA114EU	TRANSISTOR	
			or RN2302	TRANSISTOR	
		Q5310	DTC114EU	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or RN1302	TRANSISTOR	
			or UN5211	TRANSISTOR	
		Q5311	2SA1576A/RS/-X	TRANSISTOR	
		Q5312	2SD2144S/UV/-T	TRANSISTOR	
		Q5318	DTA114EU	TRANSISTOR	
			or PDTA114EU	TRANSISTOR	
			or RN2302	TRANSISTOR	
			or UN5111	TRANSISTOR	
		Q6030	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q6031	DTC114EU	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
		Q6032	DTC114EU	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
		Q7201	2SC1317/RS/-T	TRANSISTOR	
		D3	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		D6	MTZJ5.1C	ZENER DIODE	
		D2001	1SS355	DIODE	
		D2121	MTZJ8.2C	ZENER DIODE	
		D2201	11ES2	DIODE	
			or 1A3G	DIODE	
		D3001	LNB2301L01VI	LE DIODE	
		D3002	1SS133	DIODE	
		D3003	RD39ES/B3/-T2	ZENER DIODE	
			or MTZJ39C	ZENER DIODE	
		D3004	11E2-T5	DIODE	
		D3005	11E2-T5	DIODE	
		D3007	NRSA02J-0R0X	MG RESISTOR,S7700EK/EU	0Ω,1/10W
		D3008	1SS355	DIODE	
		D3011	1SS133	DIODE,S7700EK/EU	
		D3012	1SS133	DIODE,S7700EK/EU	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		D4001	1SS355	DIODE
		D4002	1SS355	DIODE
		D5001	S1WB(A)60F4102	BRIDGE DIODE
			or S1WB(A)60F4072X	BRIDGE DIODE
			or S1WB(A)60F4062X	BRIDGE DIODE
		D5101	AU01	FR DIODE
			or ERA18-04-T2	FR DIODE
			or 10ELS4	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5102	AU01	FR DIODE
			or ERA18-04-T2	FR DIODE
			or 10ELS4	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5103	AU01Z	FR DIODE
			or PG104RS	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS2	FR DIODE
			or ERA18-02-T2	FR DIODE
		D5201	AK04	DIODE,S7700EK/EU
			AU01Z	FR DIODE,S7600EK/EU
			or 1S4	SB DIODE,S7700EK/EU
			or 10ELS2	FR DIODE,S6700EK/EU
			or 11EQS04	SB DIODE,S7700EK/EU
		D5202	FML-12S	FR DIODE
			or FCF06A20	FR DIODE
			or YG901C2	FR DIODE
			or MA644	FR DIODE
		D5206	FMB-24	BARRIER DIODE
			or MA7D49	SB DIODE
			or YG801C04	SB DIODE
			or FSQ05A04B	SB DIODE
		D5209	ERA18-02-T2	FR DIODE
			or 10ELS2	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or PG104RS	FR DIODE
		D5210	AU01Z	FR DIODE
			or ERA18-02-T2	FR DIODE
			or PG104RS	FR DIODE
			or 10ELS2	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5211	AU01Z	FR DIODE
			or ERA18-02-T2	FR DIODE
			or 10ELS2	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or PG104RS	FR DIODE
		D5301	MTZJ15A	ZENER DIODE
			or RD15ES/B1/-T2	ZENER DIODE
		D5302	MTZJ6.8A	ZENER DIODE
			or RD6.8ES/B1/-T2	ZENER DIODE
		D5303	MTZJ27C	ZENER DIODE
			or RD27ES/B3/-T2	ZENER DIODE
		D5304	1SS133	DIODE
			or 1SS270A	DIODE
		D5305	11ES2	DIODE
			or 1A3G	DIODE
			or ERA15-02-T2	DIODE
		D5306	MTZJ12A	ZENER DIODE
			or RD12ES/B1/-T2	ZENER DIODE
		D5307	1SS133	DIODE
			or 1SS270A	DIODE
		D5309	1SS133	DIODE

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
	or 1SS270A	DIODE	
D5310	MTZJ11C	ZENER DIODE	
	or RD11ES/B3/-T2	ZENER DIODE	
D5314	QQR0621-001Z	FERRITE BEAD	
D6002	HZ30-2L-T2	ZENER DIODE	
	or HZ30-2LTD	Z DIODE (M)	
R1	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R2	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R4	NRSA02J-0R0X	MG RESISTOR,S6700EK/EU	0Ω,1/10W
R5	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R6	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
R7	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
R8	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R9	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R21	NRSA02J-222X	MG RESISTOR,S6700EK/EU	2.2kΩ,1/10W
R22	NRSA02J-222X	MG RESISTOR,S6700EK/EU	2.2kΩ,1/10W
R23	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
R24	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
R25	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R26	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R27	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R28	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R29	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R30	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R31	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R32	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R33	NDC21HJ-120X	CAPACITOR	12pF,50V
R34	NDC21HJ-220X	CAPACITOR	22pF,50V
R36	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
R38	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R40	NRSA02J-822X	MG RESISTOR	8.2kΩ,1/10W
R41	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R42	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
R46	NRSA02J-271X	MG RESISTOR,S7700EK/EU	270Ω,1/10W
	NRSA02J-561X	MG RESISTOR,S6700EK/EU	560Ω,1/10W
R48	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R54	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R62	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R68	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
R69	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R70	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R77	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R88	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R90	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R92	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R93	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
R104	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R113	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R114	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R401	NRSA02J-221X	MG RESISTOR,S7700EK/EU	220Ω,1/10W
R402	NRSA02J-681X	MG RESISTOR,S7700EK/EU	680Ω,1/10W
R403	NRSA02J-561X	MG RESISTOR,S7700EK/EU	560Ω,1/10W
R404	NRSA02J-473X	MG RESISTOR,S7700EK/EU	47kΩ,1/10W
R405	NRSA02J-683X	MG RESISTOR,S7700EK/EU	68kΩ,1/10W
R406	NRSA02J-393X	MG RESISTOR,S7700EK/EU	39kΩ,1/10W
R407	NRSA02J-472X	MG RESISTOR,S7700EK/EU	4.7kΩ,1/10W
R408	NRSA02J-473X	MG RESISTOR,S7700EK/EU	47kΩ,1/10W
R409	NRSA02J-103X	MG RESISTOR,S7700EK/EU	10kΩ,1/10W
R2001	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
R2002	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
R2003	QRE141J-101Y	RESISTOR	100Ω,1/4W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R2005	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
R2006	QRE141J-393Y	RESISTOR	39kΩ,1/4W
R2007	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
R2008	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2009	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2010	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2011	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R2012	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R2013	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R2014	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
R2015	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
R2016	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
R2017	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
R2018	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R2019	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R2020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R2053	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R2056	NRSA02J-101X	MG RESISTOR,S7700EK/EU	100Ω,1/10W
	NRSA02J-820X	MG RESISTOR,S6700EK/EU	82Ω,1/10W
R2057	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
R2058	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
R2059	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
R2060	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
R2061	NRSA02J-273X	MG RESISTOR,S7700EK/EU	27kΩ,1/10W
R2062	NRSA02J-3R3X	MG RESISTOR,S7700EK/EU	3.3Ω,1/10W
R2063	NRSA02J-151X	MG RESISTOR,S7700EK/EU	150Ω,1/10W
R2064	NRSA02J-473X	MG RESISTOR,S7700EK/EU	47kΩ,1/10W
R2065	NRSA02J-183X	MG RESISTOR,S7700EK/EU	18kΩ,1/10W
R2121	QRE141J-151Y	RESISTOR	150Ω,1/4W
R2202	NRSA02J-332X	MG RESISTOR,S6700EK/EU	3.3kΩ,1/10W
	NRSA02J-222X	MG RESISTOR,S7700EK/EU	2.2kΩ,1/10W
R2203	NRSA02J-222X	MG RESISTOR,S7700EK/EU	2.2kΩ,1/10W
	NRSA02J-332X	MG RESISTOR,S6700EK/EU	3.3kΩ,1/10W
R2204	NRSA02J-0R0X	MG RESISTOR,S6700EK/EU	0Ω,1/10W
	NRSA02J-102X	MG RESISTOR,S7700EK/EU	1kΩ,1/10W
R2205	NRSA02J-0R0X	MG RESISTOR,S6700EK/EU	0Ω,1/10W
	NRSA02J-102X	MG RESISTOR,S7700EK/EU	1kΩ,1/10W
R2206	QRE141J-101Y	RESISTOR	100Ω,1/4W
R2208	QRE141J-101Y	RESISTOR	100Ω,1/4W
R2209	QRE141J-101Y	RESISTOR	100Ω,1/4W
R2210	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R2211	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R2213	QRE141J-393Y	RESISTOR	39kΩ,1/4W
R2215	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R2217	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R2218	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
R2219	QRE141J-393Y	RESISTOR	39kΩ,1/4W
R2220	QRE141J-393Y	RESISTOR	39kΩ,1/4W
R2222	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2223	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2224	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2225	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R2226	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2227	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R2228	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R2229	QRE141J-563Y	RESISTOR	56kΩ,1/4W
R2251	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R2252	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R3011	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
R3012	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3013	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3016	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3017	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3018	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R3019	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3022	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3025	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3026	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3027	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3029	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3030	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3032	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3038	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R3040	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3041	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3042	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3044	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3046	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3047	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3048	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3049	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3050	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3051	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3052	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3053	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3054	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3055	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3056	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3057	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3058	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3059	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3060	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3061	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3062	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3063	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3066	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3069	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3071	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3072	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3073	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3075	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3076	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3078	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3083	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3085	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3086	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3087	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3088	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3089	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3090	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3091	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3094	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3095	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3096	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3097	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3103	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3105	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3106	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3201	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3202	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3203	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3204	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R3205	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R3206	QRE141J-183Y	RESISTOR	18kΩ,1/4W
		R3207	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3208	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3209	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3210	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3211	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3212	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R3213	NRSA02J-334X	MG RESISTOR	330kΩ,1/10W
		R3214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3215	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3217	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R3218	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R3219	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3220	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3222	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3223	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3224	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3225	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3229	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R3230	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3231	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3233	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3234	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3235	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3236	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3237	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3238	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R3239	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3241	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3242	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3244	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3251	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3671	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3672	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3673	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4001	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4003	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4004	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4005	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4007	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4008	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4009	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4010	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4011	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4012	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R4013	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4014	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R4015	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R4016	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4017	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4018	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4019	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4020	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4021	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5101	QRG02GJ-104	OMF RESISTOR	100kΩ,2W
		R5102	QRE141J-4R7Y	RESISTOR	4.7Ω,1/4W
		R5103	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R5104	QRG029J-154G	OMF RESISTOR	150kΩ,2W

#	⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
	R5105	QRT01DJ-R39X	MF RESISTOR	0.39Ω,1W
	R5106	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
	R5301	QRE141J-1R0Y	RESISTOR,S7700EK/EU	1Ω,1/4W
	R5302	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R5303	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
⚠	R5304	QRZ9005-221X	FUSI RESISTOR	220Ω,1/4W
	R5305	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
	R5306	NRSA02J-683X	MG RESISTOR	68kΩ,1/10W
	R5307	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R5308	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
	R5309	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
	R5313	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
	R5314	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R5317	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
	R5318	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
	R5319	QRE141J-221Y	RESISTOR	220Ω,1/4W
	R5321	QRE141J-221Y	RESISTOR	220Ω,1/4W
	R5322	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
	R5323	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
	R5327	NRVA02D-303X	CMF RESISTOR	30kΩ,1/10W
	R5329	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R5330	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R5332	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R6020	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R6021	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R6022	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R6030	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R6032	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
	R6033	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
	R6050	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6051	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6052	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6060	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R6061	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R6508	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R6510	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R6553	QRE141J-471Y	RESISTOR	470Ω,1/4W
	R6554	QRE141J-471Y	RESISTOR	470Ω,1/4W
	R7202	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
	R7203	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
	R7204	QRE121J-100Y	RESISTOR	10Ω,1/2W
	R7251	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
	R7252	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
	R7253	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
	C1	NCB21EK-103X	CAPACITOR,S6700EK/EU	0.01μF,25V
		NCB21EK-104X	CAPACITOR,S7700EK/EU	0.1μF,25V
	C2	NCB21EK-103X	CAPACITOR,S6700EK/EU	0.01μF,25V
		NCB21EK-104X	CAPACITOR,S7700EK/EU	0.1μF,25V
	C3	NCB21EK-103X	CAPACITOR,S6700EK/EU	0.01μF,25V
		NCB21EK-104X	CAPACITOR,S7700EK/EU	0.1μF,25V
	C4	NCB21EK-103X	CAPACITOR,S6700EK/EU	0.01μF,25V
		NCB21EK-104X	CAPACITOR,S7700EK/EU	0.1μF,25V
	C5	QEKC0JM-337	E CAPACITOR	330μF,6.3V
	C6	NCB11EK-104X	CAPACITOR	0.1μF,25V
	C7	NCB21HK-102X	CAPACITOR	0.001μF,50V
	C8	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C9	QETN1HM-225	E CAPACITOR	2.2μF,50V
	C10	NDC21HJ-151X	CAPACITOR	150pF,50V
	C11	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C14	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C15	NCB21EK-103X	CAPACITOR	0.01μF,25V
	C16	NCB11EK-104X	CAPACITOR	0.1μF,25V
	C17	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
	C18	QEKJ1HM-105	E CAPACITOR	1μF,50V
	C19	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
	C20	QEKJ1HM-105	E CAPACITOR	1μF,50V
	C21	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C22	QEKJ0JM-227	E CAPACITOR	220μF,6.3V
	C23	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C24	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C25	NDC21HJ-6R0X	CAPACITOR	6pF,50V
	C26	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C27	NCB21HK-223X	CAPACITOR	0.022μF,50V
	C28	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
	C29	NCB21EK-333X	CAPACITOR	0.033μF,25V
	C30	NCB21CK-474X	CAPACITOR	0.47μF,16V
	C31	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
	C32	QCBB1HK-103	CAPACITOR	0.01μF,50V
	C33	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
	C34	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C35	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C36	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
	C37	NCB21AK-105X	CAPACITOR	1μF,10V
	C38	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
	C39	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C40	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C45	QCFB1HZ-104	CAPACITOR	0.1μF,50V
	C53	NDC21HJ-101X	CAPACITOR	100pF,50V
	C59	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C60	QEKJ0JM-227	E CAPACITOR	220μF,6.3V
	C61	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C63	NCB21EK-104X	CAPACITOR	0.1μF,25V
	C64	NDC21HJ-220X	CAPACITOR	22pF,50V
	C65	QEKJ1HM-105	E CAPACITOR	1μF,50V
	C69	NCB21EK-104X	CAPACITOR,S6700EK/EU	0.1μF,25V
	C70	NCB21EK-104X	CAPACITOR,S7700EK/EU	0.1μF,25V
	C72	NDC21HJ-470X	CAPACITOR	47pF,50V
	C73	NDC21HJ-120X	CAPACITOR	12pF,50V
	C80	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C84	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
	C93	NDC21HJ-220X	CAPACITOR	22pF,50V
	C94	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	C103	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C106	NCB21HK-821X	CAPACITOR	820pF,50V
	C108	NDC21HJ-680X	CAPACITOR	68pF,50V
	C109	NCB21CK-224X	CAPACITOR	0.22μF,16V
	C110	NDC21HJ-820X	CAPACITOR	82pF,50V
	C114	NDC21HJ-181X	CAPACITOR	180pF,50V
	C401	NCB21HK-103X	CAPACITOR,S7700EK/EU	0.01μF,50V
	C402	NCB21HK-223X	CAPACITOR,S7700EK/EU	0.022μF,50V
	C403	NDC21HJ-121X	CAPACITOR,S7700EK/EU	120pF,50V
	C404	NDC21HJ-470X	CAPACITOR,S7700EK/EU	47pF,50V
	C406	NCB21HK-102X	CAPACITOR,S7700EK/EU	0.001μF,50V
	C407	NDC21HJ-150X	CAPACITOR,S7700EK/EU	15pF,50V
	C2001	QETN1HM-475	E CAPACITOR	4.7μF,50V
	C2002	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C2003	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
	C2004	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C2005	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
	C2006	NCB21HK-123X	CAPACITOR	0.012μF,50V
	C2007	QEKJ1CM-226	E CAPACITOR	22μF,16V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C2008	QERF1EM-475	E CAPACITOR	4.7μF,25V
		C2009	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C2010	NCB21HK-152X	CAPACITOR	0.0015μF,50V
		C2011	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C2012	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C2013	NCB21HK-331X	CAPACITOR	330pF,50V
		C2051	NCB21HK-331X	CAPACITOR	330pF,50V
		C2061	QFLC1HJ-333Z	F CAPACITOR	0.033μF,50V
		C2062	NCB21HK-332X	CAPACITOR,S7700EK/EU	0.0033μF,50V
		C2063	NCB21HK-103X	CAPACITOR,S7700EK/EU	0.01μF,50V
		C2064	QEKJ1CM-106	E CAPACITOR,S7700EK/EU	10μF,16V
		C2201	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C2202	NCB21EK-333X	CAPACITOR	0.033μF,25V
		C2203	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2204	QDGB1HK-102Y	CAPACITOR	0.001μF,50V
		C2205	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C2206	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2207	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C2208	QETN1HM-475	E CAPACITOR	4.7μF,50V
		C2209	QERF1HM-104	E CAPACITOR,S7700EK/EU	0.1μF,50V
			QERF1CM-106	E CAPACITOR,S6700EK/EU	10μF,16V
		C2210	QEKJ1CM-106	E CAPACITOR,S6700EK/EU	10μF,16V
			QEKJ1HM-104	E CAPACITOR,S7700EK/EU	0.1μF,50V
		C2211	QERF1HM-105	E CAPACITOR,S7700EK/EU	1μF,50V
		C2212	QEKJ1HM-105	E CAPACITOR,S7700EK/EU	1μF,50V
		C2213	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2214	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2215	QERF1EM-475	E CAPACITOR	4.7μF,25V
		C2216	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C2217	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2218	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C2219	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2220	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C2221	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C2222	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C2223	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C2224	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C2225	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C2226	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C2227	NCB21CK-104X	CAPACITOR	0.1μF,16V
		C2228	NCB21CK-104X	CAPACITOR	0.1μF,16V
		C2229	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2230	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2251	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C2252	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C2253	NCB21CK-104X	CAPACITOR	0.1μF,16V
		C2254	NCB21CK-104X	CAPACITOR	0.1μF,16V
		C2255	NDC21HJ-181X	CAPACITOR	180pF,50V
		C3001	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3002	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C3003	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C3004	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3008	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C3010	QEZ0244-229	EDL CAPACITOR	0.0022F
		C3012	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
		C3015	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3016	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3022	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3024	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3025	QAT3725-300Z	TRIM CAPACITOR,TIMER CLOCK	
		C3026	NCB21HK-103X	CAPACITOR	0.01μF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C3027	NBE20JM-106X	T CAPACITOR	10μF,6.3V
		C3030	NBE20JM-226X	T CAPACITOR	22μF,6.3V
		C3031	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3032	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3033	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3036	NDC21HJ-180X	CAPACITOR	18pF,50V
		C3037	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3040	QDYB1CM-103Y	CAPACITOR	0.01μF,16V
		C3042	QETJ0JM-477	E CAPACITOR	470μF,6.3V
		C3602	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3652	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C4002	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C4003	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C4004	NBE20JM-226X	T CAPACITOR	22μF,6.3V
		C4005	NCB21HK-222X	CAPACITOR	0.0022μF,50V
		C4006	NBE40JM-476X	T CAPACITOR	47μF,6.3V
		C4007	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C4008	NCB21AK-105X	CAPACITOR	1μF,10V
		C4009	NCB21HK-563X	CAPACITOR	0.056μF,50V
		C4010	NCB21EK-223X	CAPACITOR	0.022μF,25V
		C4011	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C4012	NCB21EK-224X	CAPACITOR	0.22μF,25V
		C4013	NCB21HK-563X	CAPACITOR	0.056μF,50V
		C4014	NDC21HJ-101X	CAPACITOR	100pF,50V
		C4015	NCB21HK-102X	CAPACITOR	0.001μF,50V
	⚠	C5001	QFZ9073-683	F CAPACITOR	0.068μF,250V
	⚠	C5002	QFZ9051-333	F CAPACITOR	0.033μF,250V
	⚠	C5004	QCZ9071-222	CAPACITOR	0.0022μF,400V
		C5006	QEZ0375-686	E CAPACITOR	68μF,400V
		C5101	QCZ0212-472	CAPACITOR	0.0047μF,1kV
		C5102	QEMU1VM-276	E CAPACITOR	27μF,35V
		C5103	QCZ0302-330Z	CAPACITOR	33pF,1kV
		C5104	QFLC1HJ-471Z	F CAPACITOR	470pF,50V
		C5201	QEMU0JM-227	E CAPACITOR	220μF,6.3V
		C5202	QEMT1CM-827	E CAPACITOR	820μF,16V
		C5203	QEMT1AM-228	E CAPACITOR,S7700EK/EU	2200μF,10V
			QEMT1AM-128	E CAPACITOR,S6700EK/EU	1200μF,10V
		C5204	QETN2AM-475	E CAPACITOR	4.7μF,100V
		C5205	QETN1HM-106	E CAPACITOR	10μF,50V
		C5206	QEMU1EM-187	E CAPACITOR	180μF,25V
		C5207	QETN1CM-227	E CAPACITOR	220μF,16V
		C5208	QETN1AM-227	E CAPACITOR	220μF,10V
		C5213	QEMU0JM-227	E CAPACITOR	220μF,6.3V
		C5301	QEMU0JM-227	E CAPACITOR	220μF,6.3V
		C5303	QETN1CM-107	E CAPACITOR	100μF,16V
		C5304	QFVF1HJ-274Z	F CAPACITOR	0.27μF,50V
		C5305	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C5306	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
		C5307	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C5308	QETN1CM-107	E CAPACITOR	100μF,16V
		C5309	QETN1CM-107	E CAPACITOR	100μF,16V
		C6006	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6007	QEMU0JM-227	E CAPACITOR	220μF,6.3V
		C6008	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6012	QEKJ1CM-107	E CAPACITOR	100μF,16V
		C6013	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6014	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6016	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6023	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6032	NCF21EZ-473X	CAPACITOR	0.047μF,25V
		C6033	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C6037	NBE20JM-106X	T CAPACITOR	10μF,6.3V
	C6055	NDC21HJ-220X	CAPACITOR	22pF,50V
	C6555	NDC21HJ-1R0X	CAPACITOR	1pF,50V
	C7202	QETJ0JM-477	E CAPACITOR	470μF,6.3V
	C7251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	L1	QQL29BJ-100Z	COIL	10μH
	L3	QQL29BJ-100Z	COIL	10μH
	L4	QQL29BJ-100Z	COIL	10μH
	L5	QQR0657-019Z	NOISE FILTER	
	L12	QQR0967-001	COIL	12μH
	L13	QQL071J-330Y	COIL	33μH
	L15	QQL29BJ-100Z	COIL	10μH
	L17	QQL071J-5R6Y	COIL	5.6μH
	L18	QQL071J-220Y	COIL	22μH
	L19	QQL071J-120Y	COIL	12μH
	L20	QQL071J-680Y	COIL	68μH
	L24	QQL071J-270Y	COIL	27μH
	L27	QQL071J-330Y	COIL	33μH
	L28	QQL071J-680Y	COIL	68μH
	L401	QQL071J-150Y	COIL,S7700EK/EU	15μH
	L2251	QQL29BJ-100Z	COIL	10μH
	L2252	QQL29BJ-151Z	COIL	150μH
	L5201	PELN1184	COIL	33μH
	L5202	PU60944-330K	COIL	33μH
	L6002	QQL29BJ-100Z	COIL	10μH
	L6004	QQL29BJ-100Z	COIL	10μH
	L6005	QQL29BJ-100Z	COIL	10μH
	L6031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	L7201	QQL01BJ-101Z	COIL	100μH
	X1	QAX0576-001	CRYSTAL RESCONATOR	
	X3001	QAX0445-001	CRYSTAL RESONATOR	
	X3002	QAX0527-001	CRYSTAL RESONATOR	
	S3002	QSW0695-001	PUSH SWITCH,S CASS SW	
	K2251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	K2252	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	K2253	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	K5101	QQR0678-001Z	FERRITE BEAD	
	PC3001	GP3S123	IC(PHOTO SENSOR)	
	PC3002	GP3S123	IC(PHOTO SENSOR)	
⚠	PC5101	PC123F2	PH COUPLER	
	T2052	PELN0861	OSC TRANSFORMER,S7700EK/EU	
⚠	T5001	QQS0051-001	SW TRANSFORMER	
	TU6001	QAU0151-001	TUNER	
	ET1	PQ21623-1-5	EARTH PLATE(RF)	
	ET2	LP40658-001A	EARTH PLATE(1)	
	HS1	LP40621-001A	HEAT SINK,IC5101	
	HS2	LP40479-001B	HEAT SINK,IC5301,S7700EK/EU	
	SD1	LP30720-001A	SHIELD CASE(PRE/REC)	
	OT1	QYTDSF3010Z	SCREW,X2	
	OT2	PU59915-105	#500SPACER0.01,C45	
	OT3	QYTDST3008Z	SCREW,IC5101	
	OT4	QYTDST3006Z	SCREW,IC5301,S7700EK/EU	
	FC5001	QNG0006-001Z	FUSE CLIP,F5001	
	FC5002	QNG0006-001Z	FUSE CLIP,F5001	
⚠	LF5001	PELN1204-01-01	LINE FILTER	
⚠	LF5002	QQR0608-001	LINE FILTER	
	WR101	QRE141J-0R0	RESISTOR,M/I	0Ω,1/4W
	CN1	QGF1028C1-11	FPC CONNECTOR,(4-14)U.DRUM,S6700EK/EU	
		QGF1028C1-13	FPC CONNECTOR,(4-16)U.DRUM,S7700EK/EU	
	CN901	QGF1207C1-04	FPC CONNECTOR,(1-4)FRONT S IN	
	CN902	QGF1207C1-05	FPC CONNECTOR,(1-5)F_IN	
	CN903	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL	
	CN904	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL	
	CN905	QGB2024K1-05S	CONNECTOR,(1-5)TERMINAL	
	CN907	QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL	
	CN2001	QGF1207C1-07	FPC CONNECTOR,(1-7)A/C HEAD	
	CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD	
	CN2051	QGB2024K1-04S	CONNECTOR,(1-4)A.ERASE	
	CN3001	QGF1207C1-05	FPC CONNECTOR,(1-5)DRUM MDA	
	CN3002	QGB2532J1-02	CONNECTOR,(1-2)L.MOTOR	
	CN3003	QGB2015M2-08	CONNECTOR,(1-8)CAP.MOTOR	
	CN3004	QGB2534J2-04	CONNECTOR,(1-4)R.ENCODER	
	CN3011	QGF1207C1-14	FPC CONNECTOR,(1-14)FRONT	
	CN3012	QGF1207C1-06	FPC CONNECTOR,(1-6)JOG,S7700EK/EU	
⚠	CN5001	QGA7901C3-02	CONNECTOR,(1-2)AC IN	
⚠	CP4001	ICP-N25	CIRCUIT PROTECTOR	
⚠	CP5301	ICP-N38	CIRCUIT PROTECTOR	
⚠	CP5302	ICP-N25	CIRCUIT PROTECTOR	
⚠	F5001	QMF51E2-2R0J1	FUSE	T2.0A,AC250V

****

2D DIGITAL BOARD ASSEMBLY(S6700EK/EU)<05>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW1	LPA10090-02B	2D DIGITAL BOARD ASSY	
	IC1201	JCP8036	IC	
⚠	Q1201	2SC1317/RS/-T	TRANSISTOR	
	Q1202	2SA1576A/QR/-X	TRANSISTOR	
		or 2PA1576/R/-X	TRANSISTOR	
	Q1203	2SA1576A/QR/-X	TRANSISTOR	
		or 2PA1576/R/-X	TRANSISTOR	
	Q1204	2SC4081/QRS/-X	TRANSISTOR	
		or 2PC4081/R/-X	TRANSISTOR	
	Q1205	2SC4081/S/-X	TRANSISTOR	
	Q1206	2SC4081/QRS/-X	TRANSISTOR	
		or 2PC4081/R/-X	TRANSISTOR	
	D1201	RD4.3ES/B3/-T2	ZENER DIODE	
	R1201	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
	R1202	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R1203	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
	R1204	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
	R1205	NRSA02J-102X	MG RESISTOR	1 kΩ,1/10W
	R1206	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
	R1207	NRSA02J-822X	MG RESISTOR	8.2kΩ,1/10W
	R1208	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
	R1209	NRSA02J-180X	MG RESISTOR	18Ω,1/10W
	R1210	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
	R1211	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R1212	NRSA02J-102X	MG RESISTOR	1 kΩ,1/10W
	R1213	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
	R1214	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
	R1215	NRSA02J-102X	MG RESISTOR	1 kΩ,1/10W
	R1216	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
	R1217	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
	R1218	NRSA02J-301X	MG RESISTOR	300Ω,1/10W
	R1222	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
	R1224	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
	R1225	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
	R1226	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1227	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
R1228	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R1230	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R1231	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R1232	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R1233	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
VR1201	QVZ3521-103Z	V RESISTOR,D/A LEVEL ADJ.	
C1201	QEKJ1CM-336	E CAPACITOR	33μF,16V
C1202	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1206	NDC21HJ-470X	CAPACITOR	47pF,50V
C1207	NDC21HJ-470X	CAPACITOR	47pF,50V
C1208	NDC21HJ-470X	CAPACITOR	47pF,50V
C1210	NDC21HJ-330X	CAPACITOR	33pF,50V
C1211	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
C1212	NCB21HK-102X	CAPACITOR	0.001μF,50V
C1213	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1214	NCF21CZ-105X	CAPACITOR	1μF,16V
C1215	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1216	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1217	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1218	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1219	NCF21CZ-105X	CAPACITOR	1μF,16V
C1220	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1221	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1222	NDC21HJ-151X	CAPACITOR	150pF,50V
C1223	NDC21HJ-680X	CAPACITOR	68pF,50V
C1224	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1225	NDC21HJ-151X	CAPACITOR	150pF,50V
C1226	NDC21HJ-680X	CAPACITOR	68pF,50V
C1227	NCB21EK-104X	CAPACITOR	0.1μF,25V
C1228	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C1229	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1230	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1231	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1232	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1233	QDYB1CM-103Y	CAPACITOR	0.01μF,16V
C1234	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1235	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1236	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1237	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1238	NDC21HJ-180X	CAPACITOR	18pF,50V
C1239	NDC21HJ-560X	CAPACITOR	56pF,50V
C1241	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1243	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1244	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C1245	NDC21HJ-150X	CAPACITOR	15pF,50V
C1246	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
C1248	NCB21HK-103X	CAPACITOR	0.01μF,50V
L1201	QQL071J-1R0Y	COIL	1μH
L1202	QQL29BJ-101Z	COIL	100μH
L1203	QQL29BJ-101Z	COIL	100μH
L1204	QQL29BJ-101Z	COIL	100μH
L1205	QQL071J-2R7Y	COIL	2.7μH
L1206	QQL071J-2R7Y	COIL	2.7μH
L1207	QQL29BJ-101Z	COIL	100μH
L1208	QQL071J-150Y	COIL	15μH
LC1201	QQL29BJ-100Z	COIL	10μH
SD1	LP30706-001A	SHIELD FRAME(S-VHS)	
SD2	LP30684-001A	SHIELD CASE(S-VHS)	
CN1201	QGG2502K1-17	HEADER PIN	

****

3D DIGITAL BOARD ASSEMBLY (S7700EK/EU)<05>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW1	LPA10105-01B	3D DIGITAL/2M BOARD ASSY	
IC1401	JCP8026	IC	
Q1401	2SC1317/RS/-T	TRANSISTOR	
Q1402	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1403	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1404	DTC144WU	TRANSISTOR	
	or RN1309	TRANSISTOR	
	or UN521E	TRANSISTOR	
Q1406	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1407	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1408	2SC4081/S/-X	TRANSISTOR	
Q1410	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
Q1412	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
Q1413	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1414	DTC144WU	TRANSISTOR	
	or RN1309	TRANSISTOR	
	or UN521E	TRANSISTOR	
Q1417	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
Q1418	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1419	DTC124TU	TRANSISTOR	
Q1420	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
D1401	RD4.3ES/B2/-T2	ZENER DIODE	
	or MTZJ4.3B	ZENER DIODE	
D1402	1SS133	DIODE	
	or 1N4148M	DIODE	
R1401	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
R1402	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R1404	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
R1406	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R1407	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
R1408	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
R1410	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R1411	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R1413	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R1414	NRSA02J-821X	MG RESISTOR	820Ω,1/10W
R1415	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R1416	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
R1417	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R1418	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R1421	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R1426	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
R1427	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
R1428	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
R1429	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R1430	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
R1431	NRSA02J-821X	MG RESISTOR	820Ω,1/10W

#	⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
	R1432	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
	R1433	NRSA02J-510X	MG RESISTOR	51Ω,1/10W
	R1434	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
	R1435	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
	R1436	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
	R1437	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
	R1438	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
	R1439	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
	R1440	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
	R1441	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
	R1442	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
	R1446	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1447	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1448	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1449	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1450	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1452	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
	R1453	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1454	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1455	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
	R1458	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
	R1459	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
	R1460	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
	R1461	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R1463	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	VR1401	QVZ3521-103Z	V RESISTOR,D/A LEVEL ADJ.	
	C1401	QEKJ1CM-336	E CAPACITOR	33μF,16V
	C1402	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C1403	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
	C1404	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1405	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1406	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C1407	NDC21HJ-680X	CAPACITOR	68pF,50V
	C1408	NDC21HJ-330X	CAPACITOR	33pF,50V
	C1410	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
	C1411	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1412	NDC21HJ-680X	CAPACITOR	68pF,50V
	C1413	NDC21HJ-330X	CAPACITOR	33pF,50V
	C1415	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1416	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C1417	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1421	NDC21HJ-330X	CAPACITOR	33pF,50V
	C1422	NDC21HJ-680X	CAPACITOR	68pF,50V
	C1423	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1424	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C1425	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C1426	NDC21HJ-390X	CAPACITOR	39pF,50V
	C1428	NDC21HJ-220X	CAPACITOR	22pF,50V
	C1429	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
	C1430	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1432	NCF21CZ-105X	CAPACITOR	1μF,16V
	C1433	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1435	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1436	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1437	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1438	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1439	NCF21CZ-105X	CAPACITOR	1μF,16V
	C1440	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1441	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1442	NCF21CZ-105X	CAPACITOR	1μF,16V
	C1444	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1445	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1446	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
	C1447	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1448	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
	C1449	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1450	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1451	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
	C1452	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1453	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1454	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1455	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1459	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1460	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1461	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1462	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1463	QEKJ0JM-336	E CAPACITOR	33μF,6.3V
	C1465	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1466	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1467	NDC21HJ-470X	CAPACITOR	47pF,50V
	C1468	NDC21HJ-101X	CAPACITOR	100pF,50V
	C1471	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1472	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	C1473	NCF21EZ-104X	CAPACITOR	0.1μF,25V
	L1401	QQL29BJ-100Z	COIL	10μH
	L1402	QQL071J-6R8Y	COIL	6.8μH
	L1403	QQL071J-6R8Y	COIL	6.8μH
	L1404	QQL071J-6R8Y	COIL	6.8μH
	L1405	QQL29BJ-100Z	COIL	10μH
	L1406	QQL071J-330Y	COIL	33μH
	L1407	QQL29BJ-100Z	COIL	10μH
	LC1401	QQR0657-013Z	NOISE FILTER	
	LC1402	QQR0657-010Z	NOISE FILTER	
	SD1	LP30706-001A	SHIELD FRAME(S-VHS)	
	SD2	LP30684-001A	SHIELD CASE(S-VHS)	
	CN1401	QGG2502K1-17	HEADER PIN,(1-7)MAIN	

****

TERMINAL BOARD ASSEMBLY <06>

PW1	LPA10100-01B	TERMINAL BOARD ASSY,S6700EK/EU	
	LPA10100-02B	TERMINAL BOARD ASSY,S7700EK/EU	
IC201	LC74776-9791	IC	
IC901	BH7636S	IC	
Q207	2SB1218A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
	or 2SA1576A/QR/-X	TRANSISTOR	
Q901	UN5211	TRANSISTOR	
	or PDTC114EU	TRANSISTOR	
	or RN1302	TRANSISTOR	
	or DTC114EU	TRANSISTOR	
Q902	2SB1218A/QR/-X	TRANSISTOR	
	or 2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q903	2SB1218A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
	or 2SA1576A/QR/-X	TRANSISTOR	
Q904	2SB1218A/QR/-X	TRANSISTOR	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q905	2SD1819A/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
		Q906	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q907	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q908	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q909	2SB1218A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
		Q911	UN521E	TRANSISTOR	
			or PDTC144WU	TRANSISTOR	
			or RN1309	TRANSISTOR	
			or DTC144WU	TRANSISTOR	
		Q912	UN5215	TRANSISTOR	
			or RN1311	TRANSISTOR	
			or DTC114TU	TRANSISTOR	
			or PDTC114TU	TRANSISTOR	
		D201	QRE141J-152Y	RESISTOR	1.5kΩ,1/4W
		D202	QRE141J-101Y	RESISTOR	100Ω,1/4W
		D203	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R202	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R208	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R209	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R210	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R211	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R212	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R213	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R218	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R901	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R902	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R903	NRSA02J-680X	MG RESISTOR	68Ω,1/10W
		R904	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R905	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R906	NQL092M-100X	COIL	10µH
		R907	NQL092M-100X	COIL	10µH
		R908	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R909	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R910	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R911	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R912	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R913	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R914	NQL092M-100X	COIL	10µH
		R915	NQL092M-100X	COIL	10µH
		R916	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R917	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R918	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R919	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R920	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R921	QRE123J-391X	RESISTOR	390Ω,1/2W
		R922	QRE123J-391X	RESISTOR	390Ω,1/2W
		R923	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R924	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R931	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R932	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R933	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R934	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R935	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R936	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R937	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R938	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R939	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R940	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R941	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R942	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R943	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R944	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R945	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R946	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R947	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R949	QRE123J-331X	RESISTOR	330Ω,1/2W
		R951	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R952	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R953	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R964	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R965	NRSA02J-101X	MG RESISTOR,S7700EK/EU	100Ω,1/10W
		C201	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C204	NDC21HJ-100X	CAPACITOR	10pF,50V
		C206	NDC21HJ-330X	CAPACITOR	33pF,50V
		C207	NDC21HJ-330X	CAPACITOR	33pF,50V
		C209	NCB21CK-474X	CAPACITOR	0.47µF,16V
		C210	NDC21HJ-101X	CAPACITOR	100pF,50V
		C211	NDC21HJ-101X	CAPACITOR	100pF,50V
		C212	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C213	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C214	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C215	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C216	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C217	NDC21HJ-560X	CAPACITOR	56pF,50V
		C218	NCB21AK-105X	CAPACITOR	1µF,10V
		C222	NCB21AK-105X	CAPACITOR	1µF,10V
		C225	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C901	NCB21HK-331X	CAPACITOR	330pF,50V
		C902	NCB21HK-331X	CAPACITOR	330pF,50V
		C903	NCB21HK-471X	CAPACITOR	470pF,50V
		C904	NCB21HK-471X	CAPACITOR	470pF,50V
		C905	NCB21HK-331X	CAPACITOR	330pF,50V
		C906	NCB21HK-331X	CAPACITOR	330pF,50V
		C907	NCB21HK-471X	CAPACITOR	470pF,50V
		C908	NCB21HK-471X	CAPACITOR	470pF,50V
		C910	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C912	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C913	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C914	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C915	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C916	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C917	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C918	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C921	NDC21HJ-330X	CAPACITOR	33pF,50V
		C923	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C924	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C925	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C927	QEKJ1CM-476	E CAPACITOR	47µF,16V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C930	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C931	QEKJ1CM-476	E CAPACITOR	47μF,16V
	C933	NCB21HK-331X	CAPACITOR	330pF,50V
	C934	NCB21HK-331X	CAPACITOR	330pF,50V
	C935	NCB21HK-471X	CAPACITOR	470pF,50V
	C936	NCB21HK-471X	CAPACITOR	470pF,50V
	C937	NCB21HK-331X	CAPACITOR	330pF,50V
	C938	NCB21HK-331X	CAPACITOR	330pF,50V
	C939	NCB21HK-471X	CAPACITOR	470pF,50V
	C940	NCB21HK-471X	CAPACITOR	470pF,50V
	C941	QETJ0JM-477	E CAPACITOR	470μF,6.3V
	C942	QEKJ1CM-476	E CAPACITOR	47μF,16V
	C943	QEKJ1CM-476	E CAPACITOR	47μF,16V
	C945	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C946	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C947	QETJ0JM-477	E CAPACITOR	470μF,6.3V
	C951	QEKC1CM-476	E CAPACITOR	47μF,16V
	L201	QQL29BK-1R0Z	COIL	1μH
	L202	QQL071J-330Y	COIL	33μH
	L203	QQL071J-220Y	COIL	22μH
	L204	QQL29BJ-100Z	COIL	10μH
	L206	QQL071J-220Y	COIL	22μH
	L901	QQL231J-R22Y	COIL	0.22μH
	L902	QQL071J-1R0Y	COIL	1μH
	L903	QQL071J-150Y	COIL	15μH
	L904	QQL071J-150Y	COIL	15μH
	L910	QQL071J-1R0Y	COIL	1μH
	L913	QQL071J-4R7Y	COIL	4.7μH
	L914	QQL071J-4R7Y	COIL	4.7μH
	L915	QQL071J-4R7Y	COIL	4.7μH
	L916	QQL071J-4R7Y	COIL	4.7μH
	L917	QQL071J-4R7Y	COIL	4.7μH
	L918	QQL071J-4R7Y	COIL	4.7μH
	L919	QQL071J-4R7Y	COIL	4.7μH
	L920	QQL071J-4R7Y	COIL	4.7μH
	ET1	PQ21987-1-1	EATH PLATE(TERM.)	
⚠	TB1	LP30712-001B	TERMINAL BOARD ASSY,S6700EK/EU	
⚠		LP30712-002B	TERMINAL BOARD ASSY,S7700EK/EU	
	OT1	QYTDSF3008Z	SCREW,X8	
	J901	PEMC1177	RGB21PIN SOCKET,AV1 IN/OUT	
	J902	PEMC1177	RGB21PIN SOCKET,AV2/DECODER	
	J903	QND0084-001	S JACK,S_OUT	
	J912	QNN0023-003	PIN JACK,A.OUT(L)	
	J913	QNN0023-002	PIN JACK,A.OUT(R)	
	J925	PU60659	MINI JACK,SAT.CTL	
	J926	PU60659	MINI JACK	
	WR901	QUB320-07ZAZA	SIN TWIST WIRE	
	CN911	QGF1208F1-14	FPC CONNECTOR,(1-14)S-SUB	
	CN913	QGB2024J1-12S	CONNECTOR,(1-12)MAIN	
	CN914	QGB2024J1-12S	CONNECTOR,(1-12)MAIN	
	CN915	QGB2024J1-05S	CONNECTOR,(1-5)MAIN	
	CN917	QGB2024J1-10S	CONNECTOR,(1-10)MAIN	

****

AUDIO CONTROL HEAD BOARD ASSEMBLY <12>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PW1	LPA10010-01A1	A/C HEAD BOARD ASSY
	CN1	QGF1208F1-07	FPC CONNECTOR

****

DEMOD BOARD ASSEMBLY <14>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW1	LPA10094-01C	DEMOD BOARD ASSY	
	IC6701	MSP34VCDT	IC	
	Q6701	2SC3936/BC/-X	TRANSISTOR	
	D6701	1SS133	DIODE	
		or 1N4148M	DIODE	
	R6701	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
	R6702	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
	R6703	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
	R6704	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6705	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
	R6706	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
	R6707	NRSA02J-220X	MG RESISTOR	22Ω,1/10W
	R6708	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6709	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6710	NRSA02J-100X	MG RESISTOR	10Ω,1/10W
	R6711	NRSA02J-684X	MG RESISTOR	680kΩ,1/10W
	R6712	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6713	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
	R6714	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6715	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
	R6716	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
	R6719	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R6720	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
	R6721	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
	C6701	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C6702	NCB21HK-222X	CAPACITOR	0.0022μF,50V
	C6704	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C6705	NCB21HK-102X	CAPACITOR	0.001μF,50V
	C6707	NDC21HJ-470X	CAPACITOR	47pF,50V
	C6708	NDC21HJ-8R0X	CAPACITOR	8pF,50V
	C6709	NDC21HJ-1R0X	CAPACITOR	1pF,50V
	C6713	NCF21CZ-224X	CAPACITOR	0.22μF,16V
	C6714	NCB21HK-682X	CAPACITOR	0.0068μF,50V
	C6715	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
	C6716	NCB21HK-682X	CAPACITOR	0.0068μF,50V
	C6717	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
	C6719	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C6720	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C6721	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C6723	NCB21HK-103X	CAPACITOR	0.01μF,50V
	C6724	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
	L6701	QQL231J-1R0Y	COIL	1μH
	L6702	QQL231J-3R3Y	COIL	3.3μH
	X6701	QAX0443-001	CRYSTAL RESONATOR	
	K6701	NQR0200-003X	FERRITE BEAD	
	K6702	NQR0200-003X	FERRITE BEAD	
	K6703	NQR0200-003X	FERRITE BEAD	
	K6704	NQR0200-003X	FERRITE BEAD	
	K6705	NQR0200-003X	FERRITE BEAD	
	K6706	NQR0200-003X	FERRITE BEAD	
	K6707	NQR0200-003X	FERRITE BEAD	
	BK1	LP40077-001A	BRACKET(BOARD)	
	CN6701	QGG2502K1-10	HEADER PIN	

＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊

S-SUB BOARD ASSEMBLY <15>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10103-01A	S-SUB BOARD ASSY	
		IC501	JCP8018	IC	
		IC502	VC2076DP	IC	
		R503	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R504	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R505	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R506	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R507	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R508	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R509	NRSA02J-162X	MG RESISTOR	1.6kΩ,1/10W
		R510	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R511	NRVA02D-471X	CMF RESISTOR	470Ω,1/10W
		R512	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R513	NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
		R514	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R515	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R516	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R517	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R522	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R523	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R524	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R525	NRSA02J-125X	MG RESISTOR	1.2MΩ,1/10W
		R527	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R531	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R532	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R533	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R534	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R535	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R536	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		C501	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C502	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C503	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C504	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C505	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C506	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C507	QEKJ0JM-227	E CAPACITOR	220μF,6.3V
		C508	QEPF1HM-474	NP E CAPACITOR	0.47μF,50V
		C509	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C510	QEKJ0JM-227	E CAPACITOR	220μF,6.3V
		C511	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C512	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C513	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C514	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C515	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C516	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C517	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C518	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C519	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C520	QERF1EM-475	E CAPACITOR	4.7μF,25V
		C521	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C522	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C523	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C524	NDC21HG-301X	CAPACITOR	300pF,50V
		C525	NDC21HG-301X	CAPACITOR	300pF,50V
		C526	NDC21HJ-101X	CAPACITOR	100pF,50V
		C527	NDC21HJ-181X	CAPACITOR	180pF,50V
		C528	NDC21HG-271X	CAPACITOR	270pF,50V
		C529	NDC21HG-820X	CAPACITOR	82pF,50V
		C530	NDC21HG-221X	CAPACITOR	220pF,50V
		C531	NDC21HG-301X	CAPACITOR	300pF,50V
		C532	NDC21HG-301X	CAPACITOR	300pF,50V
		C533	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C534	QETJ0JM-477	E CAPACITOR	470μF,6.3V
		C535	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C551	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C552	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C553	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C554	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C555	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C556	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C557	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C558	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C559	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C560	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C561	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C563	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C568	NDC21HJ-101X	CAPACITOR	100pF,50V
		C569	NDC21HJ-101X	CAPACITOR	100pF,50V
		C570	NDC21HJ-101X	CAPACITOR	100pF,50V
		C571	NDC21HJ-101X	CAPACITOR	100pF,50V
		C572	NDC21HJ-101X	CAPACITOR	100pF,50V
		C573	NDC21HJ-101X	CAPACITOR	100pF,50V
		L501	QQL29BJ-100Z	COIL	10μH
		L503	QQL29BJ-100Z	COIL	10μH
		L504	QQL29BJ-100Z	COIL	10μH
		BK1	LP40077-001A	BRACKET(BOARD)	
		CN511	QGG2503K2-30	HEADER PIN,(1-30)MAIN	
		CN512	QGF1209F2-14	FFC/FPC CONNECTOR,(1-14)TERMINAL	

＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊

SW/DISPLAY BOARD ASSEMBLY (S6700EK/EU)<28>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10097-01A1	SW/DISPLAY BOARD ASSY	
		IC7001	M35500BGP	IC	
			or M35500BFP	IC	
			or M35500AGP	IC	
		IC7002	PNA4652M00XB	IR DETECT UNIT	
			or GP1U281X	IR DETECT UNIT	
		D7002	RD9.1ES/B2/-T2	ZENER DIODE	
			or UZ9.1BSB	ZENER DIODE	
			or MTZJ9.1B	ZENER DIODE	
		D7004	1SS133	DIODE	
		D7005	1SS133	DIODE	
		D7009	SLR-342MC3F	LE DIODE	
		D7010	SLR-342VC3F	LE DIODE	
		R7001	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7002	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7003	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7004	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7005	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7006	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7007	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7008	QRE141J-103Y	RESISTOR	10kΩ,1/4W

#	⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
	R7013	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7020	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7021	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
	R7022	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
	R7023	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
	R7024	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
	R7025	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
	R7026	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
	R7027	QRE141J-153Y	RESISTOR	15kΩ,1/4W
	R7028	QRE141J-393Y	RESISTOR	39kΩ,1/4W
	R7030	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7031	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
	R7032	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
	R7033	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
	R7034	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
	R7035	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
	R7036	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
	R7037	QRE141J-153Y	RESISTOR	15kΩ,1/4W
	R7038	QRE141J-393Y	RESISTOR	39kΩ,1/4W
	R7040	QRE141J-331Y	RESISTOR	330Ω,1/4W
	R7041	QRE141J-331Y	RESISTOR	330Ω,1/4W
	C7001	QCFB1HZ-104	CAPACITOR	0.1μF,50V
	C7002	QETN1HM-106	E CAPACITOR	10μF,50V
	C7007	QETN1HM-476	E CAPACITOR	47μF,50V
	C7009	QCSB1HJ-150	CAPACITOR	15pF,50V
	C7010	QCFB1HZ-104	CAPACITOR	0.1μF,50V
	C7011	QETN1AM-227	E CAPACITOR	220μF,10V
	C7019	QDVB1EZ-223Y	CAPACITOR	0.022μF,25V
	C7192	QCBB1HJ-681	CAPACITOR	680pF,50V
	C7194	QCBB1HJ-681	CAPACITOR	680pF,50V
	L7191	QRE141J-101Y	RESISTOR	100Ω,1/4W
	L7192	QRE141J-101Y	RESISTOR	100Ω,1/4W
	L7196	QQL071J-1R0Y	COIL	1μH
	S7001	QSW0456-002Z	TACT SWITCH,POWER	
	S7002	QSW0456-002Z	TACT SWITCH,CH+	
	S7003	QSW0456-002Z	TACT SWITCH,CH-	
	S7004	QSW0456-002Z	TACT SWITCH,REC	
	S7005	QSW0456-002Z	TACT SWITCH,PAUSE	
	S7010	QSW0456-002Z	TACT SWITCH,TIMER	
	S7011	QSW0456-002Z	TACT SWITCH,REVIEW	
	S7012	QSW0456-002Z	TACT SWITCH,SVHS ET	
	S7013	QSW0456-002Z	TACT SWITCH,REC LINK	
	S7014	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
	S7015	QSW0456-002Z	TACT SWITCH,SP/LP	
	S7016	QSW0456-002Z	TACT SWITCH,PUSH JOG-	
	S7017	QSW0456-002Z	TACT SWITCH,PUSH JOG+	
	DI7001	QLF0031-002	FL TUBE	
	HD1	LP30140-001A	FDP HOLDER L,DI7001	
	HD2	LP30141-001A	FDP HOLDER R,DI7001	
	HD3	PQM30038-7	LED HOLDER,D7009	
	HD4	PQM30038-7	LED HOLDER,D7010	
	J7191	PEMC1009-04	PIN JACK,VIDEO IN	
	J7192	PEMC1010-03	PIN JACK(SW),AUDIO(L)IN	
	J7193	PEMC1010-02	PIN JACK(SW),AUDIO(R)IN	
	CN7001	QGF1207C1-14	FPC CONNECTOR,(1-14)MAIN	
	CN7002	QGF1207C1-06	FPC CONNECTOR,(1-6)SHUTTLE/PLAY	
	CN7191	QGF1207C1-05	FPC CONNECTOR,(1-5)MAIN	

#	⚠ REF No.	PART No.	PART NAME, DESCRIPTION	

****

SW/DISPLAY BOARD ASSEMBLY (S7700EK/EU)<28>

#	⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
	PW1	LPA10054-17A1	SW/DISPLAY BOARD ASSY	
	IC7001	M35500BGP	IC	
		or M35500AGP	IC	
		or M35500BFP	IC	
	IC7002	PNA4652M00XB	IR DETECT UNIT	
		or GP1U281X	IR DETECT UNIT	
	D7002	RD9.1ES/B2/-T2	ZENER DIODE	
		or UZ9.1BSB	ZENER DIODE	
		or MTZJ9.1B	ZENER DIODE	
	D7004	1SS133	DIODE	
	D7005	1SS133	DIODE	
	D7006	1SS133	DIODE	
	D7009	SLR-342MC3F	LE DIODE	
	D7010	SLR-342VC3F	LE DIODE	
	D7011	SLR-342MC3F	LE DIODE	
	R7001	QRE141J-471Y	RESISTOR	470Ω,1/4W
	R7002	QRE141J-471Y	RESISTOR	470Ω,1/4W
	R7003	QRE141J-471Y	RESISTOR	470Ω,1/4W
	R7004	QRE141J-471Y	RESISTOR	470Ω,1/4W
	R7005	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7006	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7007	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7008	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7013	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7020	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7021	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
	R7022	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
	R7023	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
	R7024	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
	R7025	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
	R7026	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
	R7027	QRE141J-153Y	RESISTOR	15kΩ,1/4W
	R7028	QRE141J-393Y	RESISTOR	39kΩ,1/4W
	R7030	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R7031	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
	R7032	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
	R7033	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
	R7034	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
	R7035	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
	R7036	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
	R7037	QRE141J-153Y	RESISTOR	15kΩ,1/4W
	R7038	QRE141J-393Y	RESISTOR	39kΩ,1/4W
	R7040	QRE141J-331Y	RESISTOR	330Ω,1/4W
	R7041	QRE141J-331Y	RESISTOR	330Ω,1/4W
	R7042	QRE141J-331Y	RESISTOR	330Ω,1/4W
	C7001	QCFB1HZ-104	CAPACITOR	0.1μF,50V
	C7002	QETN1HM-106	E CAPACITOR	10μF,50V
	C7007	QETN1HM-476	E CAPACITOR	47μF,50V
	C7009	QCSB1HJ-150	CAPACITOR	15pF,50V
	C7010	QCFB1HZ-104	CAPACITOR	0.1μF,50V
	C7011	QETN1AM-227	E CAPACITOR	220μF,10V
	C7019	QDVB1EZ-223Y	CAPACITOR	0.022μF,25V
	C7192	QCBB1HJ-681	CAPACITOR	680pF,50V
	C7194	QCBB1HJ-681	CAPACITOR	680pF,50V
	L7191	QRE141J-101Y	RESISTOR	100Ω,1/4W
	L7192	QRE141J-101Y	RESISTOR	100Ω,1/4W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L7196	QQL231J-1R0Y	COIL	1μH
S7001	QSW0456-002Z	TACT SWITCH,POWER	
S7002	QSW0456-002Z	TACT SWITCH,CH+	
S7003	QSW0456-002Z	TACT SWITCH,CH-	
S7004	QSW0456-002Z	TACT SWITCH,REC	
S7005	QSW0456-002Z	TACT SWITCH,PAUSE	
S7010	QSW0456-002Z	TACT SWITCH,TBC	
S7011	QSW0456-002Z	TACT SWITCH,REVIEW	
S7012	QSW0456-002Z	TACT SWITCH,C.RESET	
S7013	QSW0456-002Z	TACT SWITCH,REC LINK	
S7014	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
S7015	QSW0456-002Z	TACT SWITCH,PLAY	
S7016	QSW0456-002Z	TACT SWITCH,SP/LP	
S7017	QSW0456-002Z	TACT SWITCH,A.DUB	
DI7001	QLF0032-002	FL TUBE	
HD1	PQ34668	FDP HOLDER(L),DI7001	
HD2	PQ34669	FDP HOLDER(R),DI7001	
HD3	PQM30038-7	LED HOLDER,D7009	
HD4	PQM30038-7	LED HOLDER,D7010	
HD5	PQM30038-7	LED HOLDER,D7011	
J7191	PEMC1009-04	PIN JACK,VIDEO IN	
J7192	PEMC1010-03	PIN JACK(SW),AUDIO(L)IN	
J7193	PEMC1010-02	PIN JACK(SW),AUDIO(R)IN	
CN7001	QGF1207C1-14	FPC CONNECTOR,(1-14)MAIN	
CN7191	QGF1207C1-05	FPC CONNECTOR,(1-5)MAIN	

****

REC SAFETY BOARD ASSEMBLY (S6700EK/EU)<32>

PW2	LPA10097-01A2	REC SAFETY BOARD ASSY
S7041	QSW0602-004	PUSH SWITCH
FW7001	QUM022-07A4A4	PARA RIBON WIRE

****

REC SAFETY BOARD ASSEMBLY (S7700EK/EU)<32>

PW2	LPA10054-01C2	REC SAFETY BOARD ASSY
S7041	QSW0602-004	PUSH SWITCH
FW7001	QUM032-07A4A4	PARA RIBON WIRE

****

JACK BOARD ASSEMBLY(S6700EK/EU)<36>

PW4	LPA10097-01A4	JACK BOARD ASSY
J7194	QND0084-001	S JACK
CN7192	QGF1207F1-04	FPC CONNECTOR,(1-4)

****

JACK BOARD ASSEMBLY (S7700EK/EU)<36>

PW4	LPA10054-17A4	JACK BOARD ASSY
J7194	QND0084-001	S JACK,S IN
CN7192	QGF1207F1-04	FPC CONNECTOR,(1-4)MAIN

****

JOG BOARD ASSEMBLY (S7700EK/EU)<37>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PW3	LPA10054-03C3	JOG BOARD ASSY
UN7091	PEME0786-02	JOG SHUTTLE AY
CN7005	QGF1207F1-06	FPC CONNECTOR,(1-6)MAIN

****

AUDIO ERASE BOARD ASSEMBLY <46>

PW2	LPA10106-01A2	AUDIO ERASE BOARD ASSY,S6700EK/EU	
	LPA10106-02A2	AUDIO ERASE BOARD ASSY,S7700EK/EU	
Q2051	2SC4081/QRS/-X	TRANSISTOR	
	or 2SD1819A/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
R2054	NRSA02J-153X	MG RESISTOR,S7700EK/EU	15kΩ,1/10W
	NRSA02J-123X	MG RESISTOR,S6700EK/EU	12kΩ,1/10W
R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
C2052	QFLC1HJ-333Z	F CAPACITOR,S7700EK/EU	0.033μF,50V
	QFLC1HJ-823Z	F CAPACITOR,S6700EK/EU	0.082μF,50V
C2053	NCB21HK-332X	CAPACITOR,S7700EK/EU	0.0033μF,50V
	NCB21HK-472X	CAPACITOR,S6700EK/EU	0.0047μF,50V
C2054	NCB21EK-223X	CAPACITOR,S6700EK/EU	0.022μF,25V
	NCB21HK-103X	CAPACITOR,S7700EK/EU	0.01μF,50V
C2055	QEKJ1CM-106	E CAPACITOR	10μF,16V
T2051	PELN0832	OSC TRANSFORMER,S6700EK/EU	
	PELN0860	OSC TRANSFORMER,S7700EK/EU	
CN2052	QGB2024J1-04S	CONNECTOR,(1-4)MAIN	

****

LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LPA10010-01A2	LOADING MOTOR BOARD ASSY
CN1	QGB2533K1-02	CONNECTOR

****

SHUTTLE/PLAY BOARD ASSEMBLY(S6700EK/EU)<85>

PW3	LPA10097-01A3	SHUTTLE/PLAY BOARD ASSY
UN7091	PESW0679	SHUTTLE SWITCH
CN7005	QGF1207F1-06	FPC CONNECTOR,(1-6)FRONT